

LUMBER
AND ITS
UTILIZATION



HOUSE FRAMING DETAILS



NATIONAL LUMBER
MANUFACTURERS
ASSOCIATION

VOL. IV • CH. 3

CONSTRUCTION INFORMATION SERIES

SEVENTH EDITION
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Price Ten Cents

NATIONAL LUMBER MANUFACTURERS
ASSOCIATION
WASHINGTON, D. C.

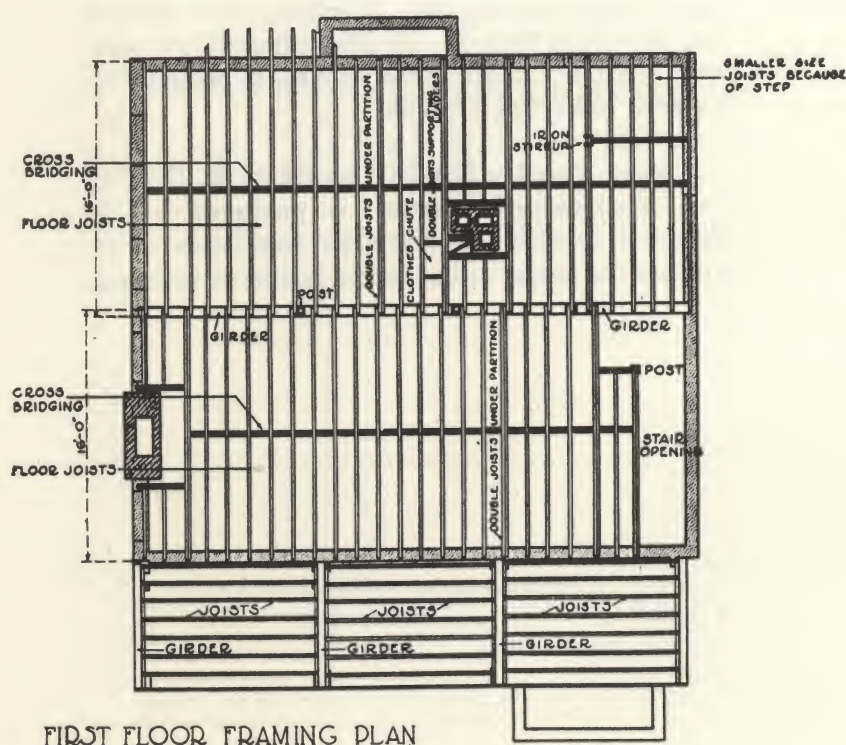
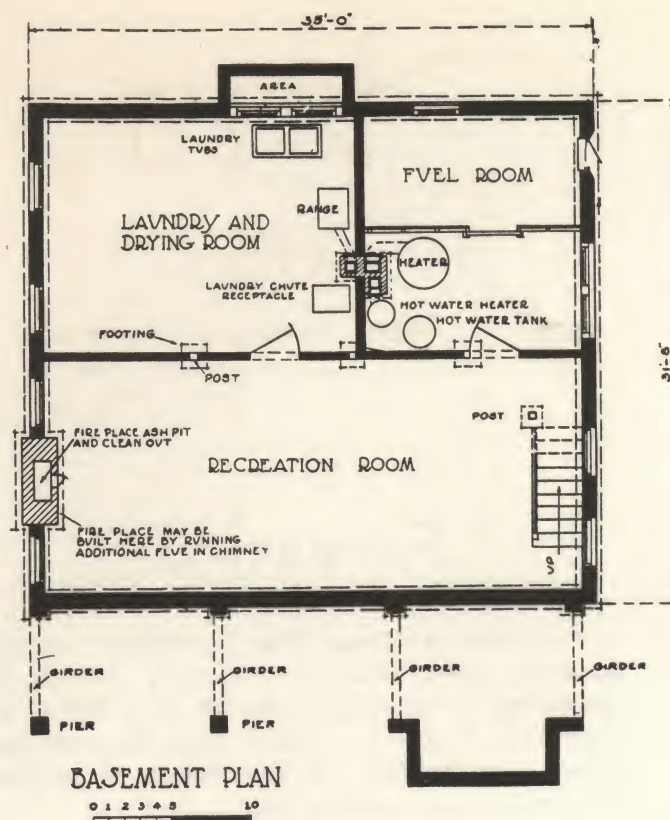
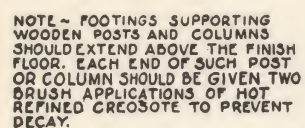
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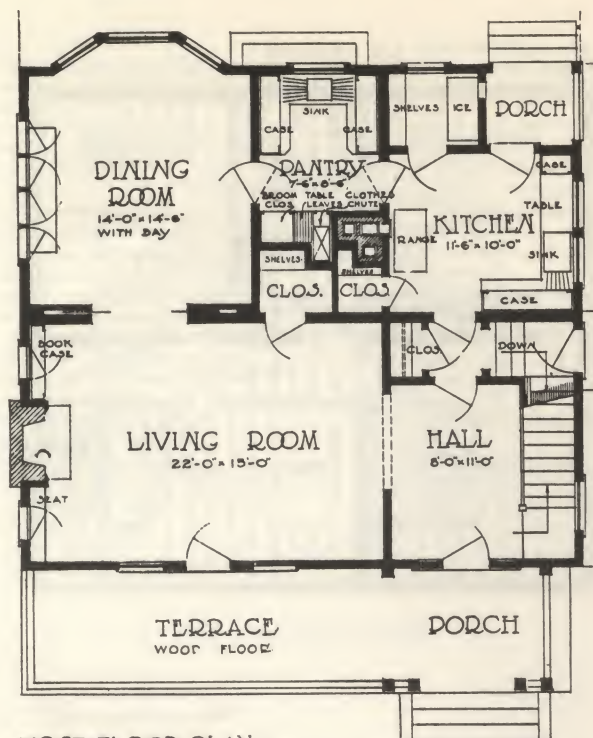
Foreword

The plates of "House Framing Details," on the succeeding pages, illustrate satisfactory methods of assembling the structural parts of frame buildings. They should serve as a reliable guide for architects, owners, and builders, and for students of architecture and building construction.

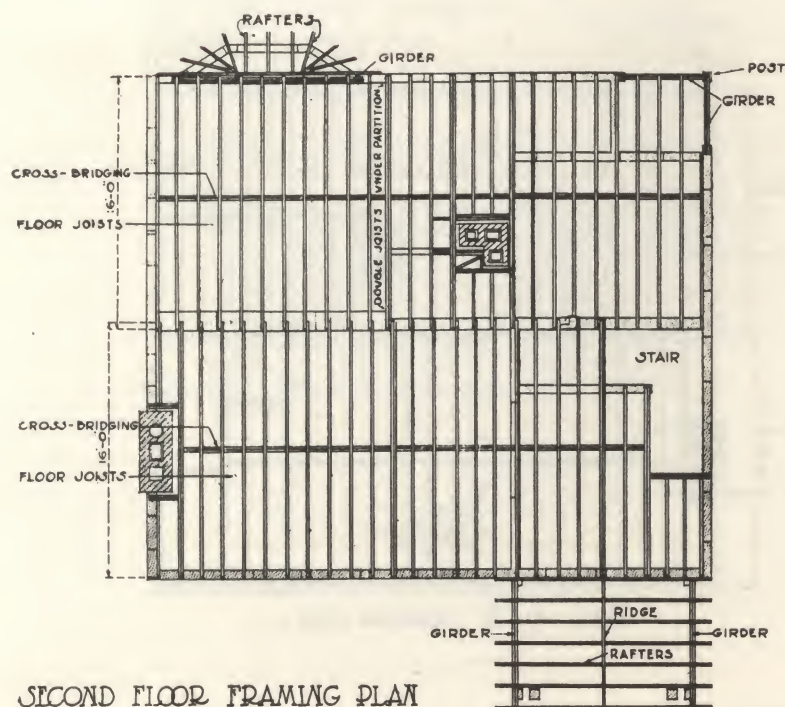
The information presented has been developed from the results of common practice, that have been demonstrated and proved. It reflects recent research and laboratory findings. Buildings framed in accordance with the illustrations should be substantial, durable, and storm resistant.

"House Framing Details," revised by R. G. Kimbell, Architectural Advisor, is published by the National Lumber Manufacturers Association to encourage the proper utilization of lumber in buildings.

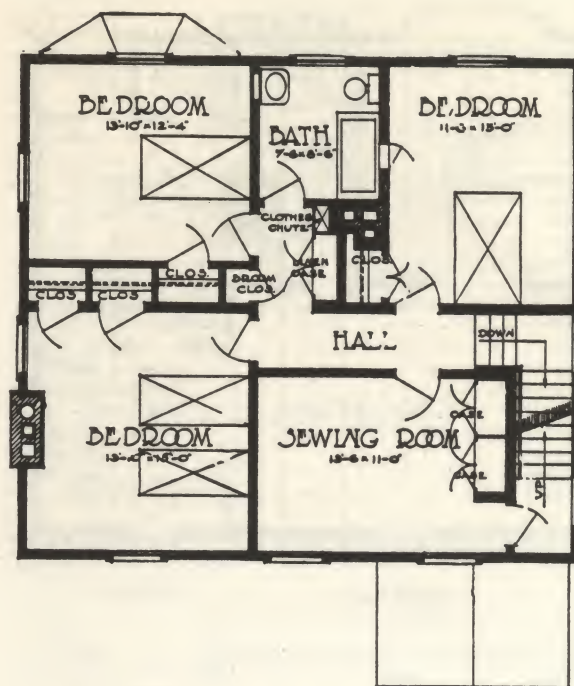




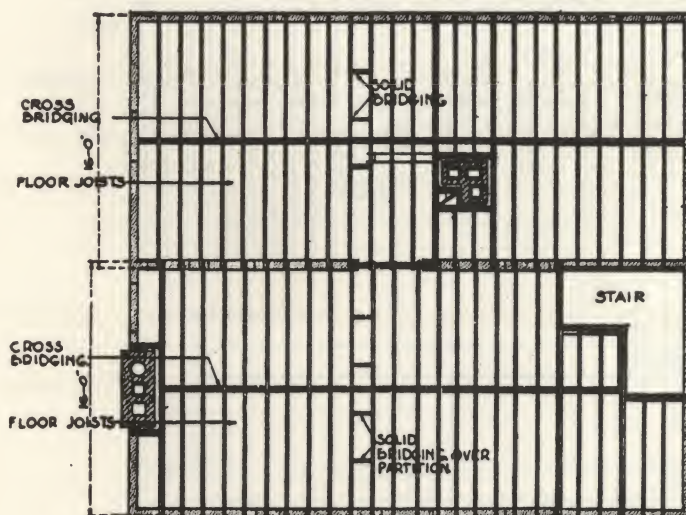
FIRST FLOOR PLAN



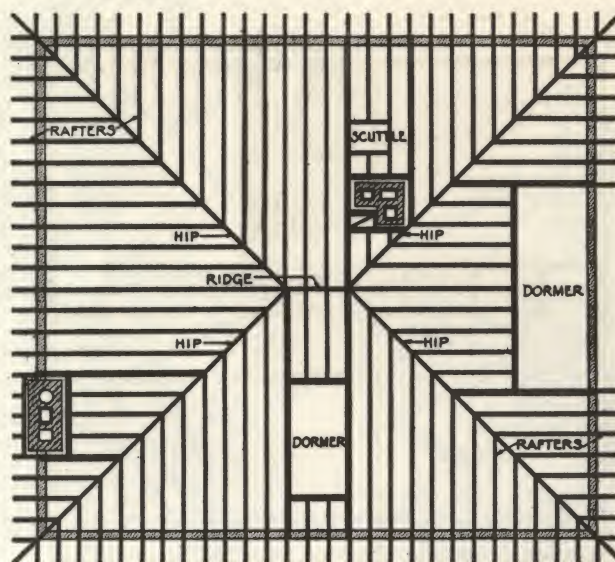
SECOND FLOOR FRAMING PLAN



SECOND FLOOR PLAN



ATTIC FLOOR FRAMING PLAN



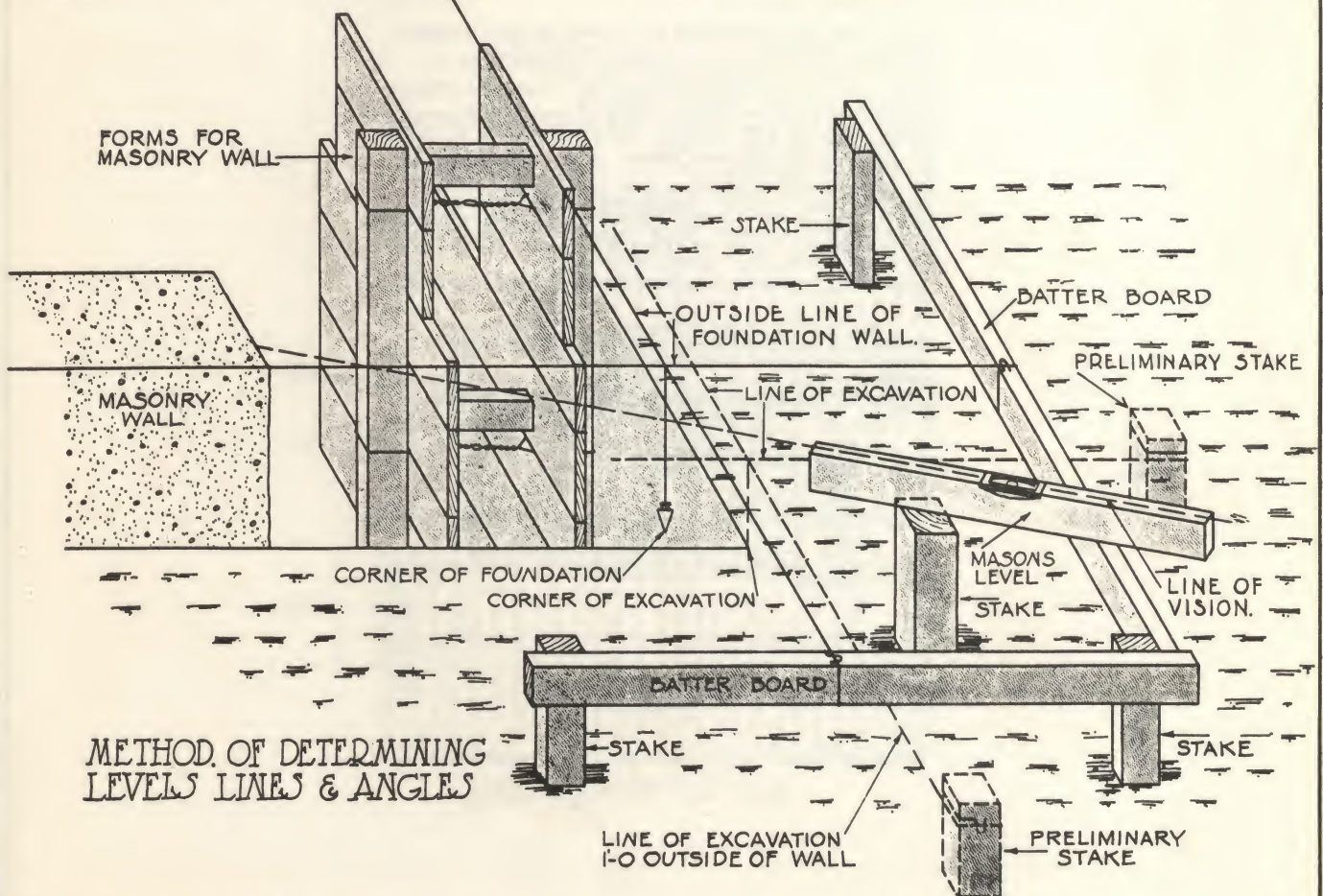
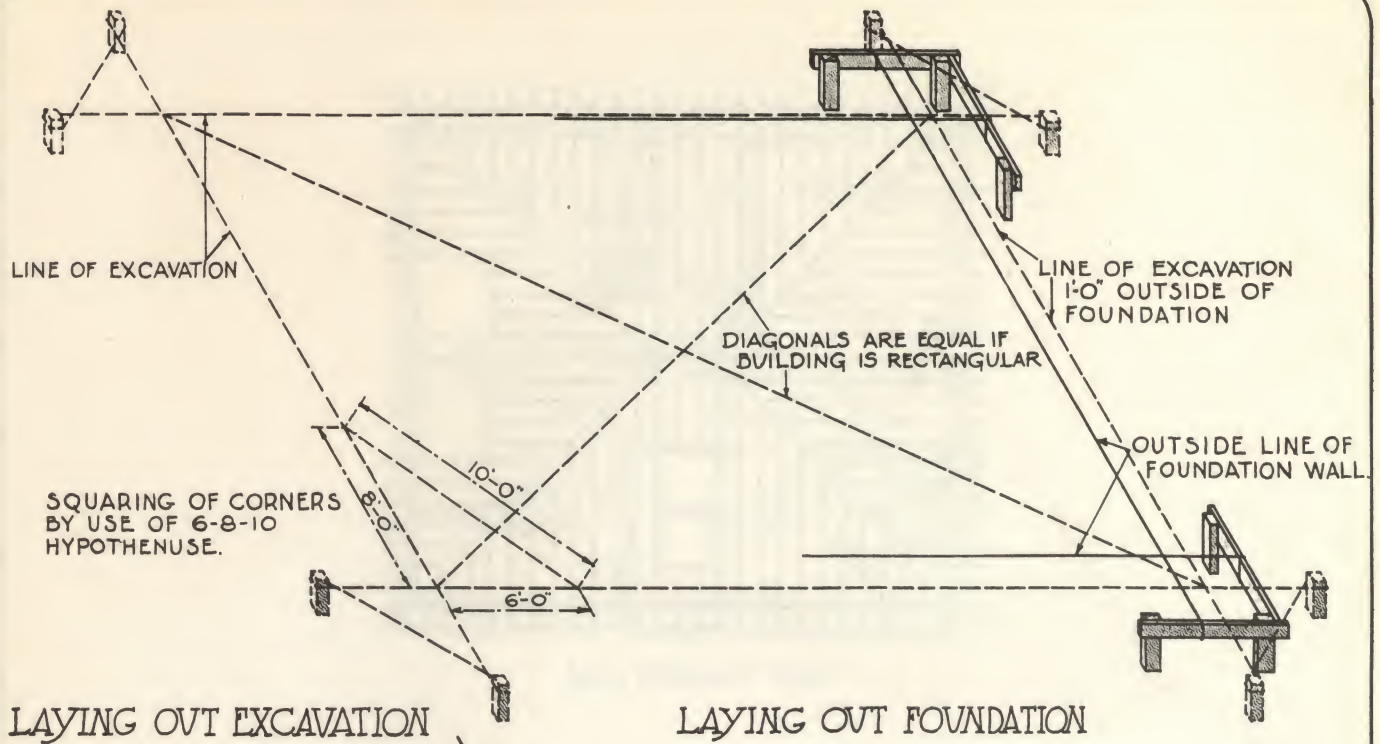
ROOF FRAMING PLAN

NOTES—FRAME BUILDINGS SHOULD BE DESIGNED TO APPLY STANDARD LENGTHS OF LUMBER.
 STANDARD LENGTHS ARE MANUFACTURED IN MULTIPLES OF TWO FEET UP TO LENGTH OF TWENTY FOUR FEET.
 WHERE GIRDERS OR OTHER MEMBERS ARE BUILT UP, SECTIONS SHOULD BE SECURELY SPIKED TOGETHER.
 THE CUTTING OF BEAMS, GIRDERS, JOISTS OR OTHER SUPPORTING TIMBERS SHOULD BE DONE IN SUCH MANNER AS NOT TO REDUCE THE STRENGTH OF SUCH TIMBERS.
 ALL JOISTS UNDER PARTITIONS, AROUND LARGE OPENINGS, CHIMNEYS ETC SHOULD BE DOUBLED.
 ALL TIMBER BEARING MEMBERS SHOULD BE LAID CROWN EDGE UP. TOPS AND ENDS OF PORCH TIMBERS SHOULD RECEIVE TWO COATS APPLICATIONS OF HOT REFINED CREOSOTE OR OTHER PRESERVATIVE.
 STUDS SHOULD BE DOUBLED UNDER ENDS OF ALL DOUBLE JOISTS.
 DISTANCE BETWEEN ROWS OF CROSS BRIDGING OR CROSS BRIDGING AND BEARING SHOULD NOT EXCEED EIGHT FEET.

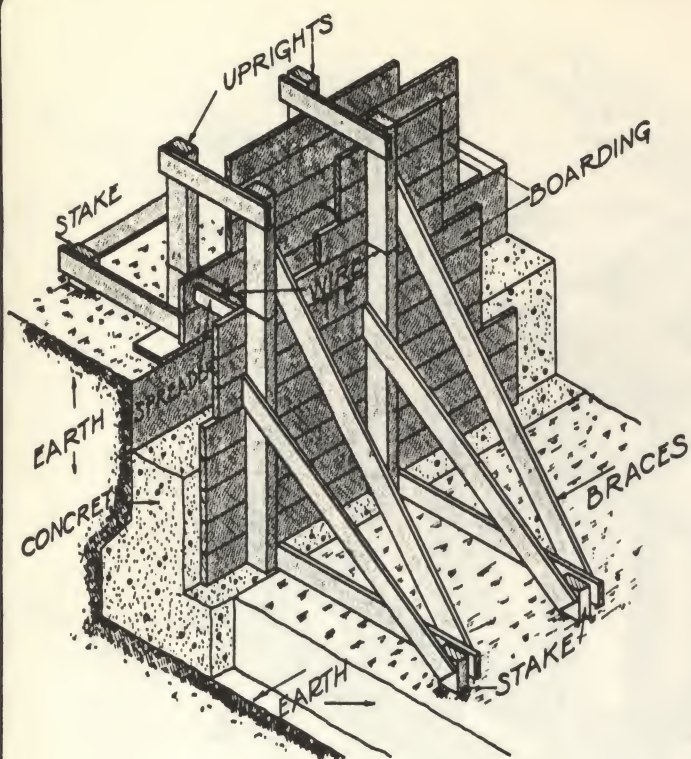
WHEN THE SIZE OF LUMBER IS GIVEN IN WHOLE NUMBERS AMERICAN STANDARD NOMINAL SIZES ARE MEANT. STRESSES SHOULD BE BASED ON THE ACTUAL SIZE OF MATERIAL USED.
 THE MINIMUM ACTUAL SIZE OF LUMBER SIGNIFIED BY WHOLE NUMBERS SHALL NOT BE LESS THAN AS FOLLOWS.

NOMINAL SIZE.	ACTUAL FINISHED SIZE.
2 X 4	1 7/8 X 3 5/8
2 X 6	1 7/8 X 5 5/8
2 X 8	1 7/8 X 7 1/2
2 X 10	1 7/8 X 9 1/2
2 X 12	1 7/8 X 11 1/2
3 X 4	2 3/8 X 5 3/8
3 X 6	2 3/8 X 5 3/8
3 X 8	2 3/8 X 7 1/2
3 X 10	2 3/8 X 9 1/2
3 X 12	2 3/8 X 11 1/2

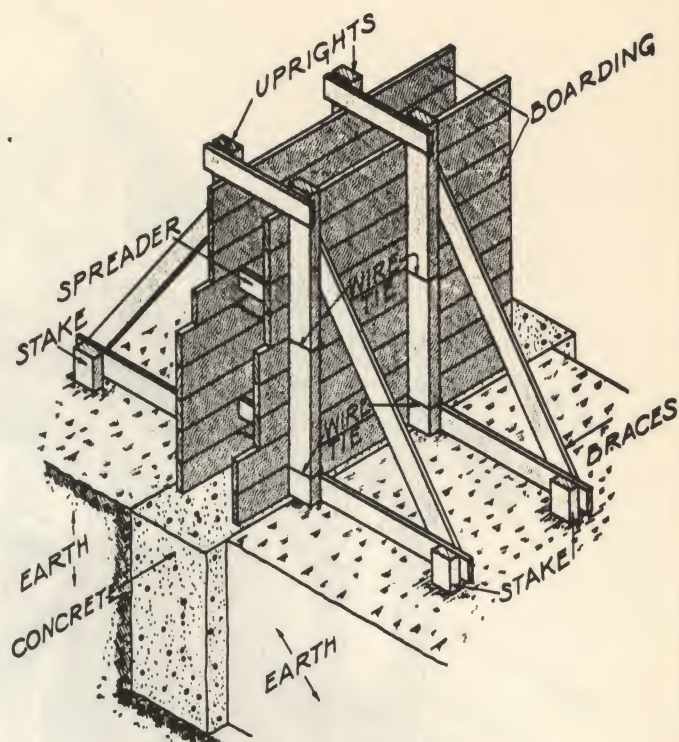
FOR POSTS 3 X 3 AND LARGER, AND FOR BEAMS 3 X 6 AND LARGER THE FINISHED SIZE MAY BE 1/2" SMALLER IN EACH DIMENSION THAN THE NOMINAL SIZE.



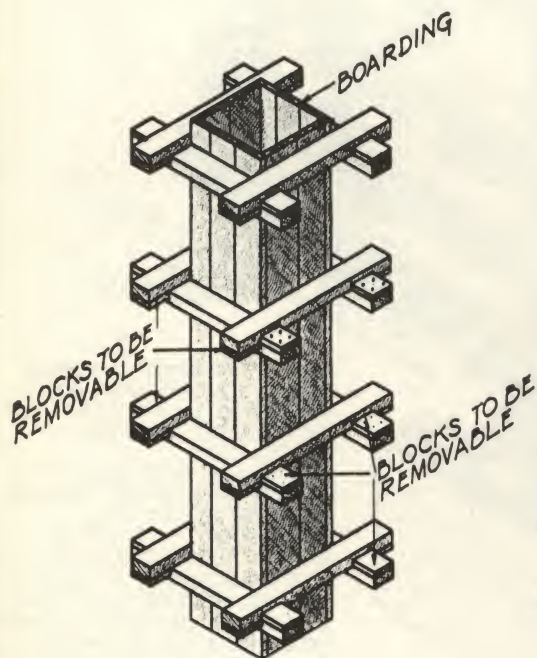
METHOD OF STAKING AND LAYING OUT THE FOUNDATION WALLS



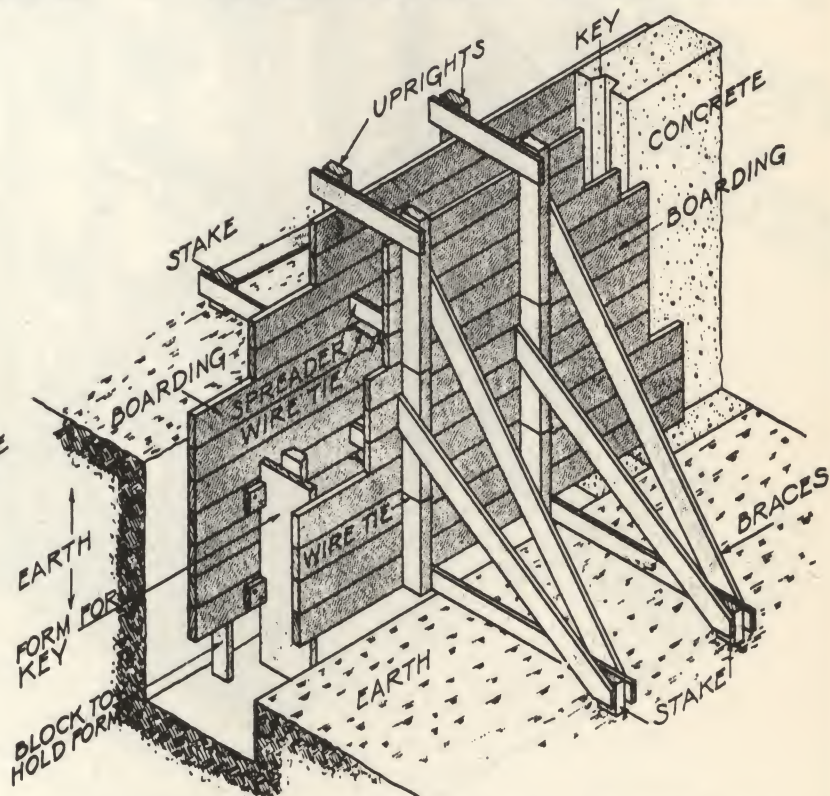
FORMS FOR WALL IN SOLID EARTH



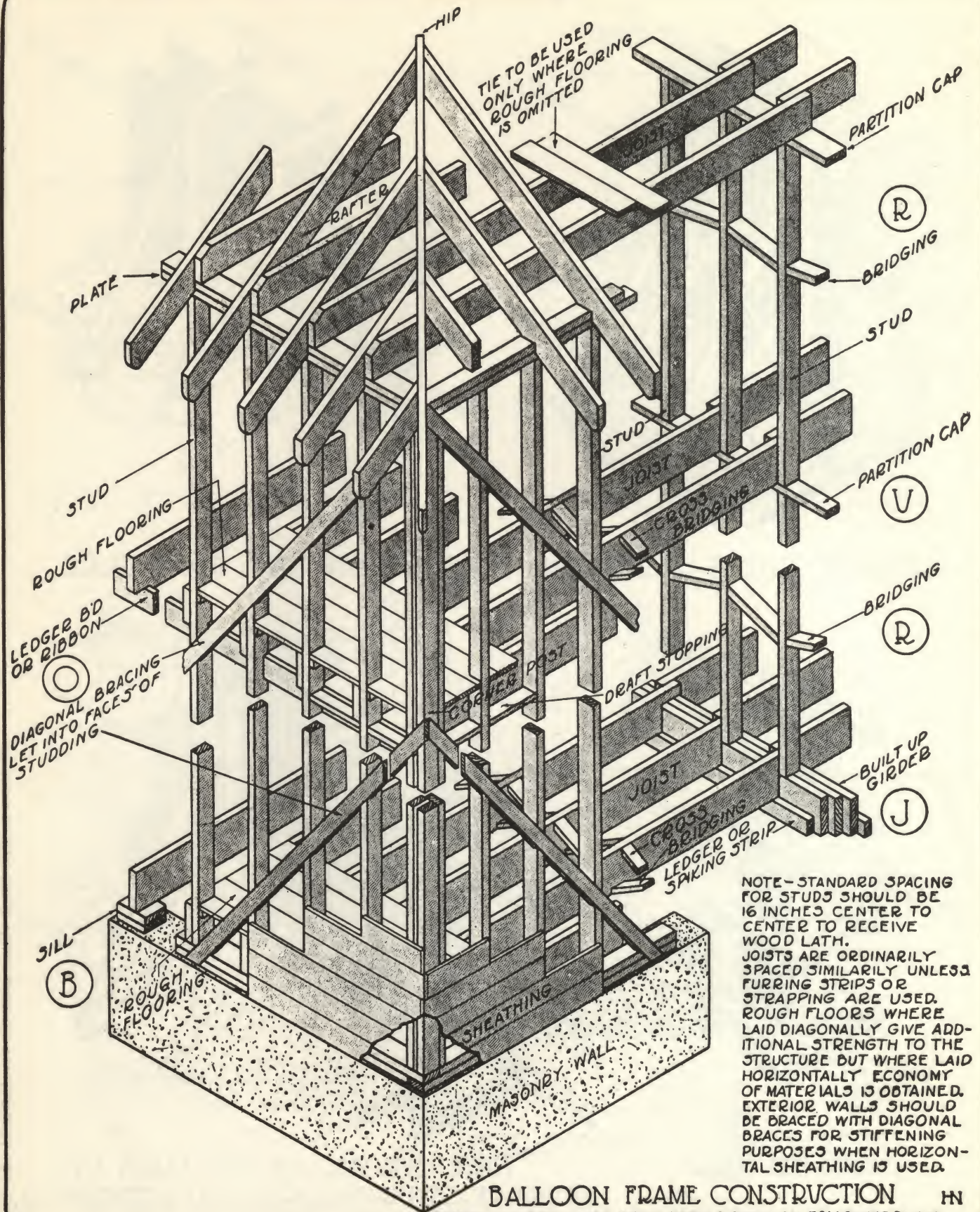
FORMS FOR WALL ABOVE GRADE



FORMS FOR PIERS

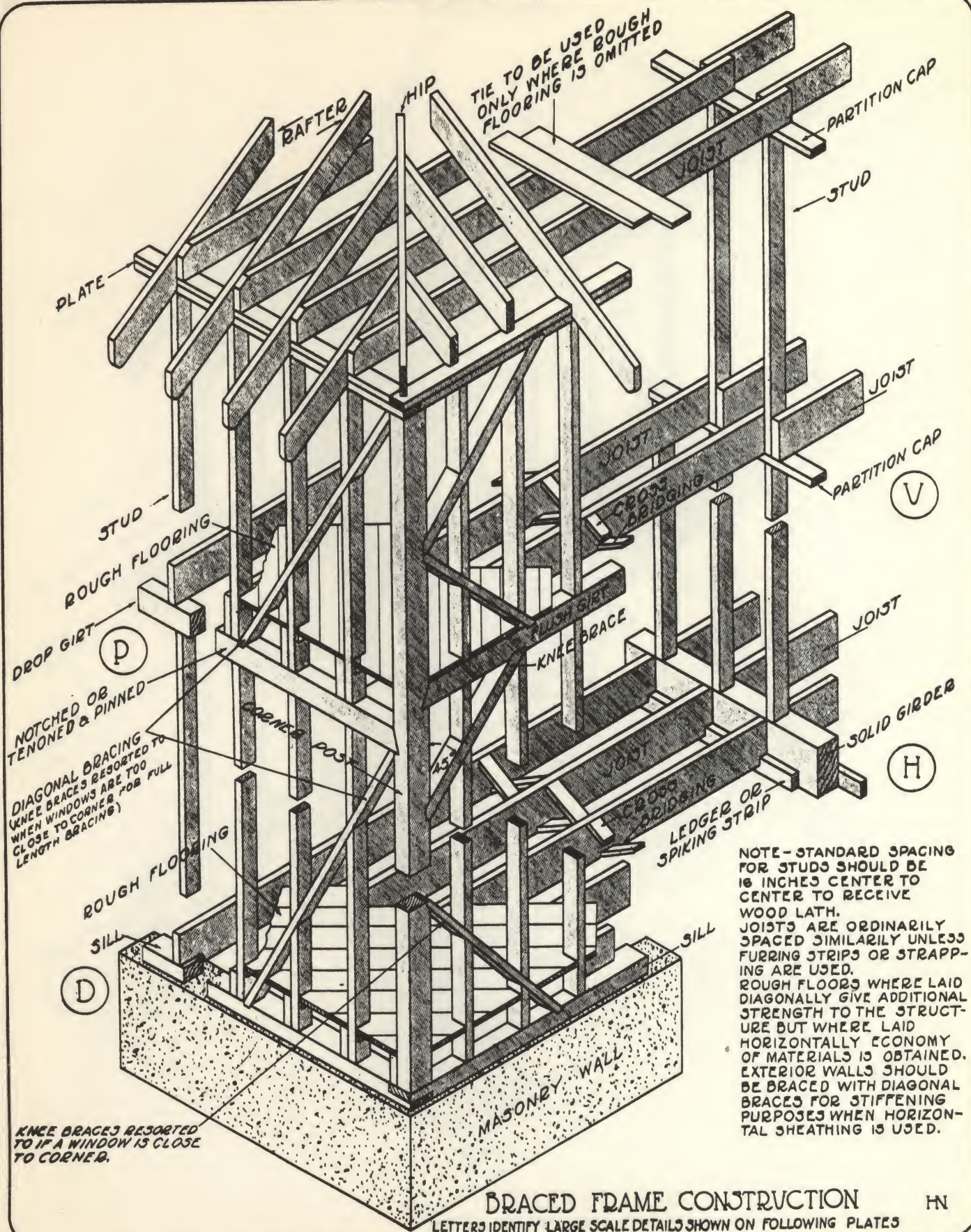


FORMS FOR WALL IN SOFT EARTH AND METHOD OF KEYING WALL FOR A HAULT IN CONCRETE



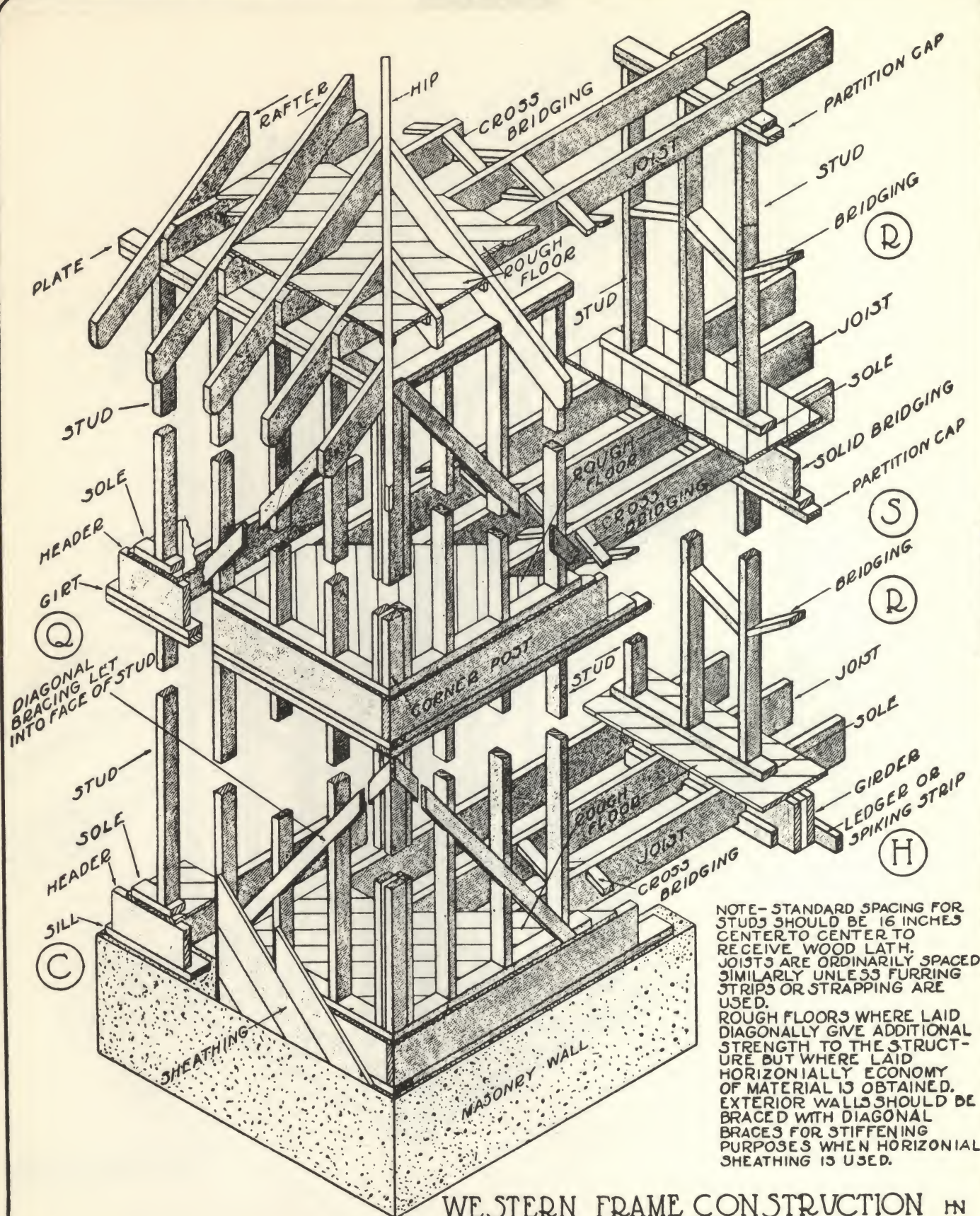
MEMORANDA

RECEIVED
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U.S. AIR FORCE
HEADQUARTERS
WASHINGTON, D.C.



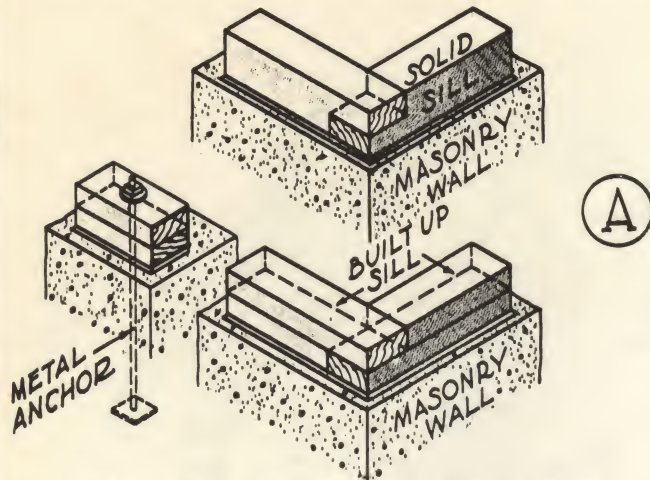
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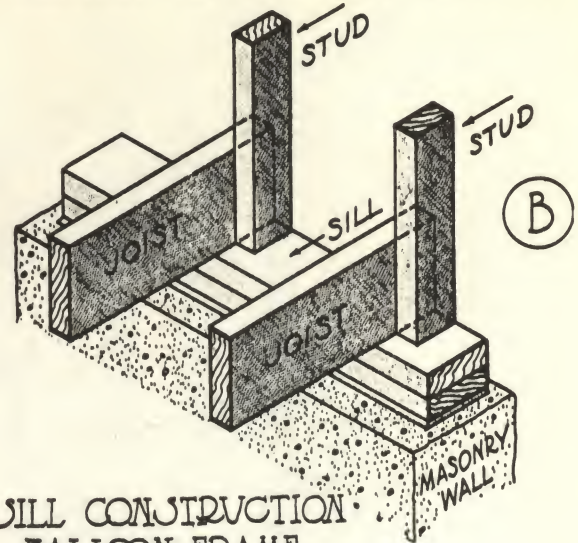


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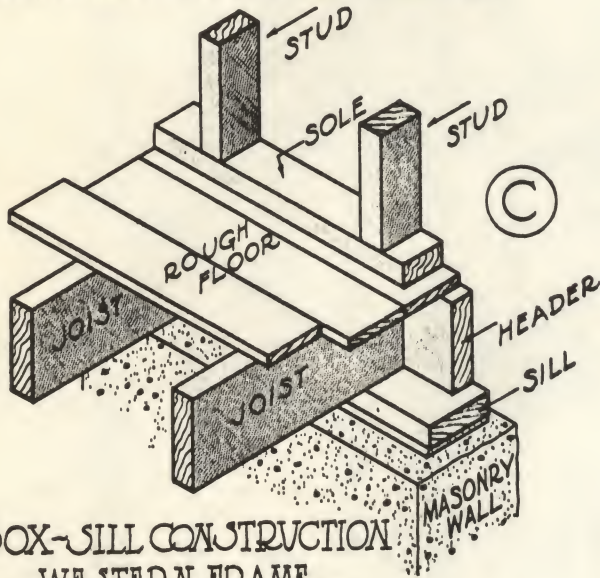
ALL SILLS SHOULD BE BEDDED IN MORTAR AND SECURELY ANCHORED TO MASONRY



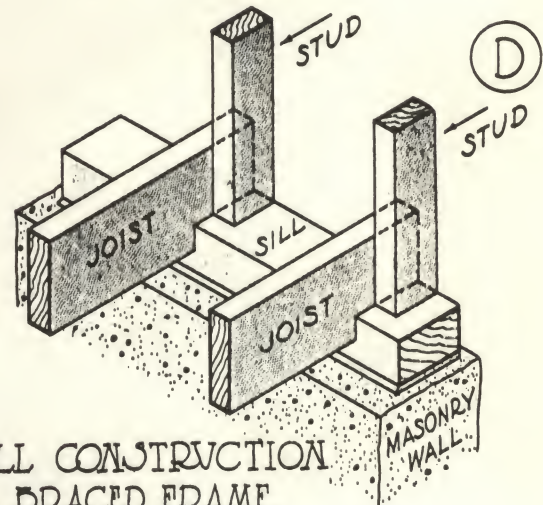
HALVING OF SILLS AT CORNER



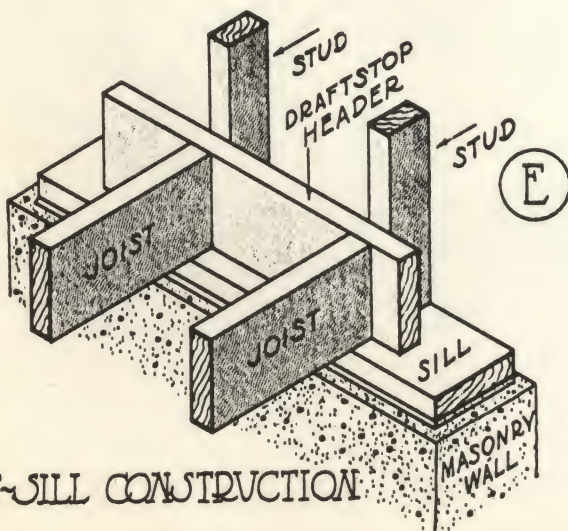
SILL CONSTRUCTION
BALLOON FRAME



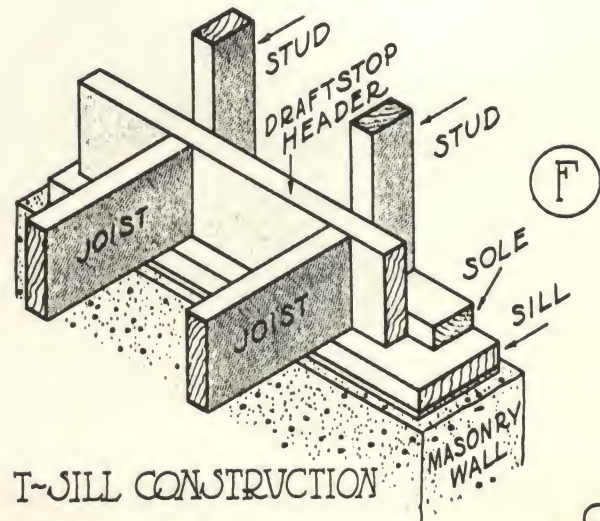
BOX-SILL CONSTRUCTION
WESTERN FRAME



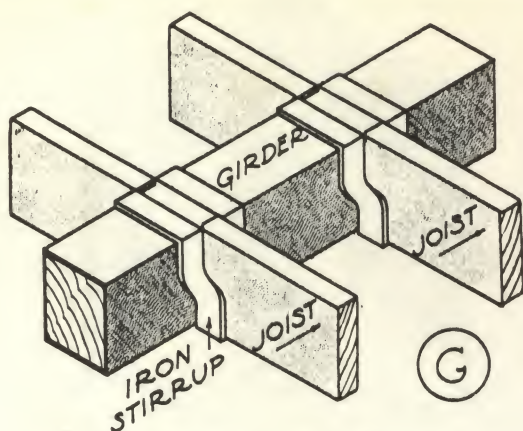
SILL CONSTRUCTION
BRACED FRAME



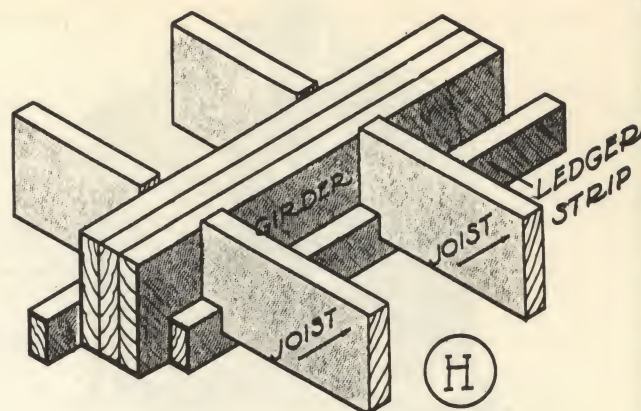
T-SILL CONSTRUCTION



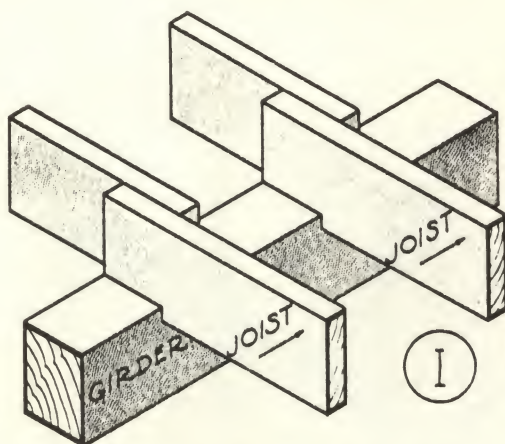
T-SILL CONSTRUCTION



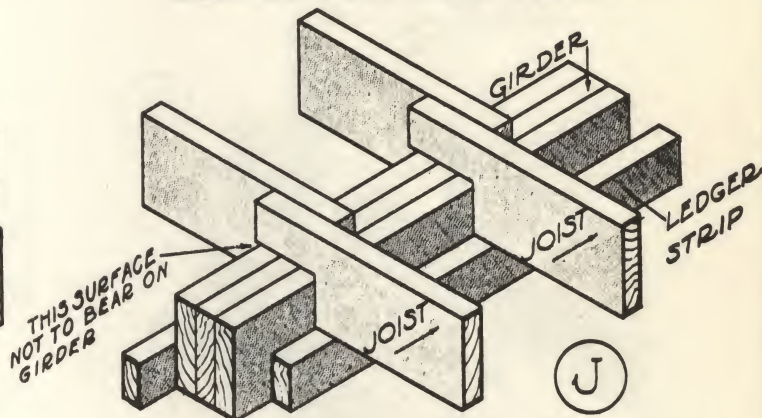
JOISTS HUNG ON GIRDER
WITH IRON STIRRUPS



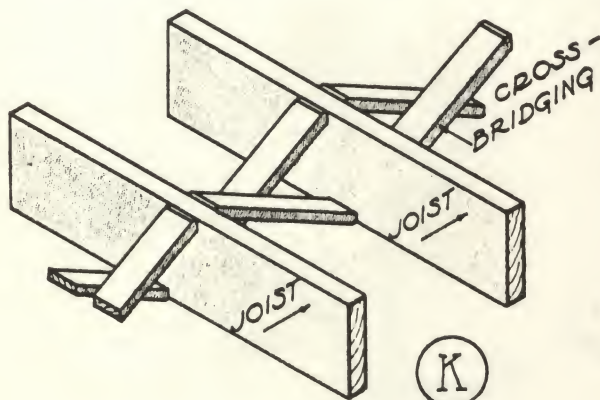
GIRDER CONSTRUCTION TO
EQUALIZE SHRINKAGE
BRACED & WESTERN FRAME



JOISTS SIZED DOWN 1 IN.
ON GIRDER WITH LAP

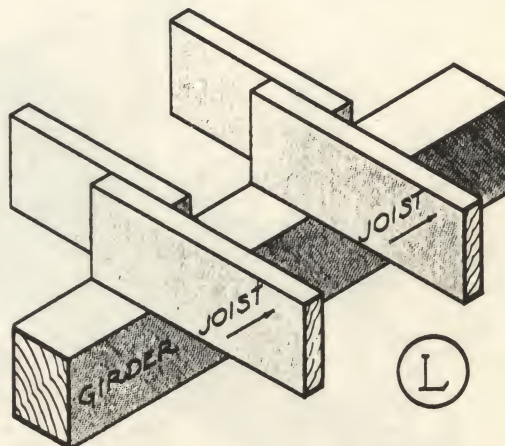


GIRDER CONSTRUCTION TO
EQUALIZE SHRINKAGE
BALLOON FRAME

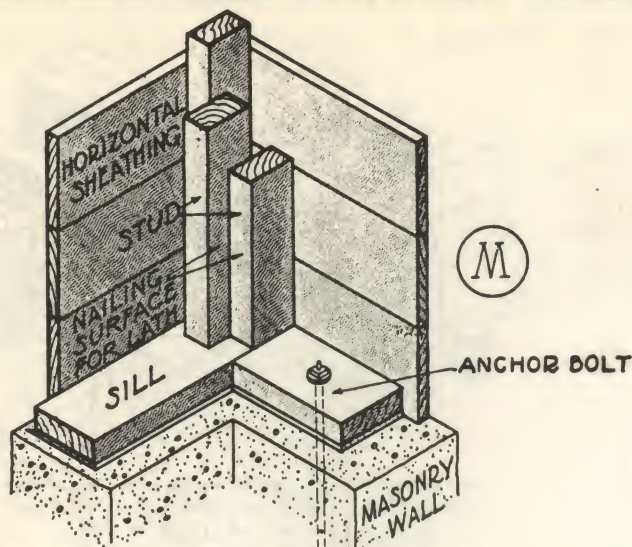


CROSS-BRIDGING BETWEEN JOISTS

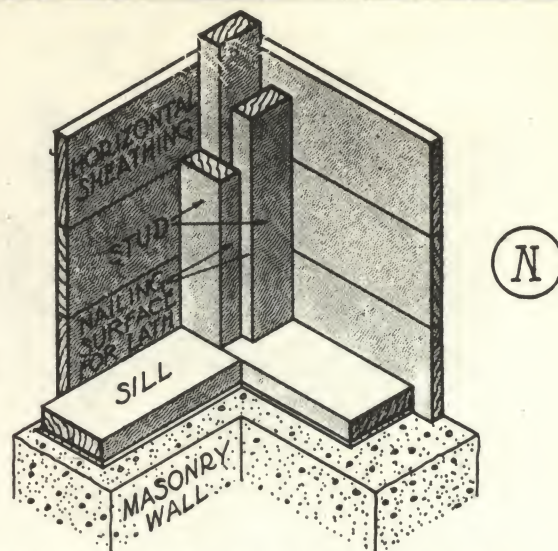
DIMINISHED DEPTH OF BEAM AT BEARING POINTS REDUCES CARRYING CAPACITY.



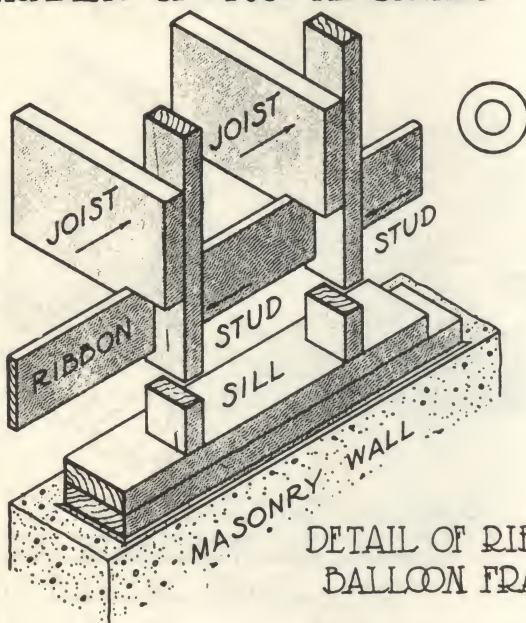
JOISTS LAPPED ON TOP OF GIRDER



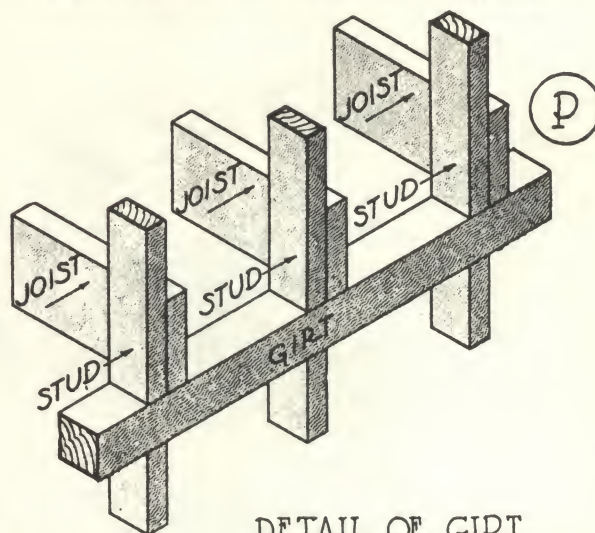
FRAMING OF STUD AT CORNER



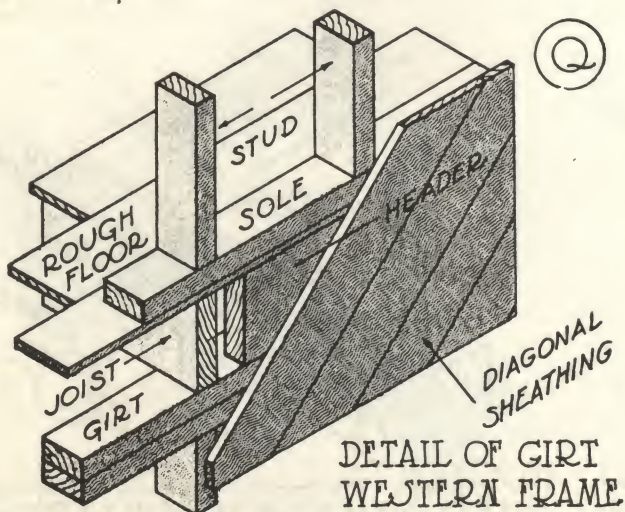
FRAMING OF STUD AT CORNER



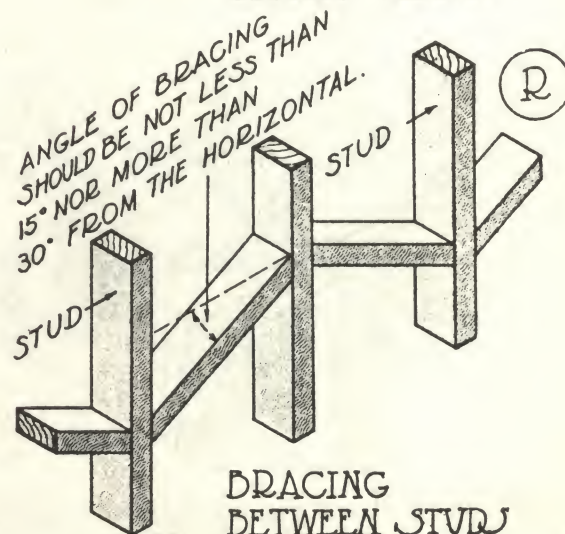
DETAIL OF RIBBON
BALLOON FRAME



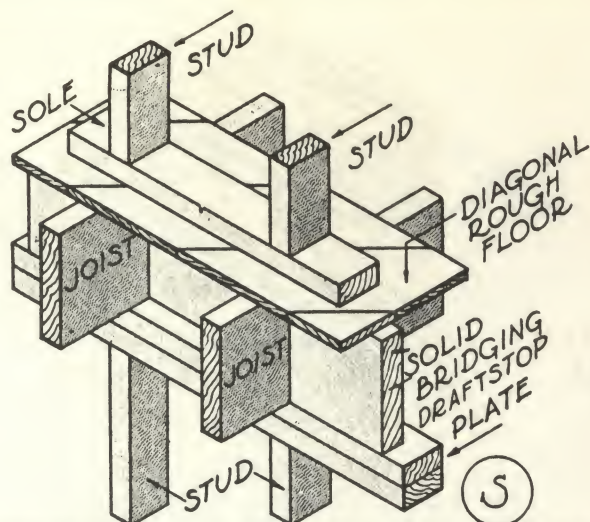
DETAIL OF GIRT
BRACED FRAME



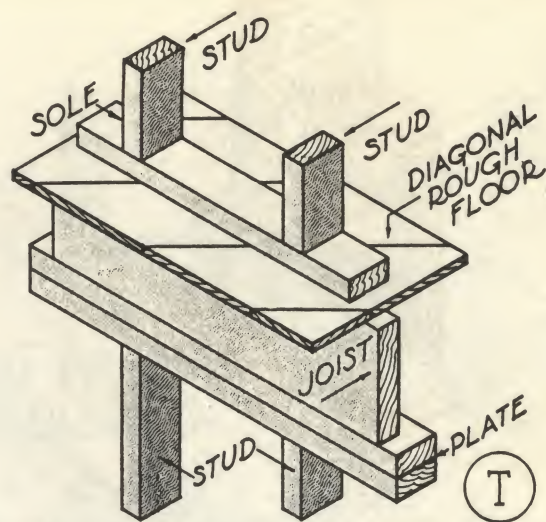
DETAIL OF GIRT
WESTERN FRAME



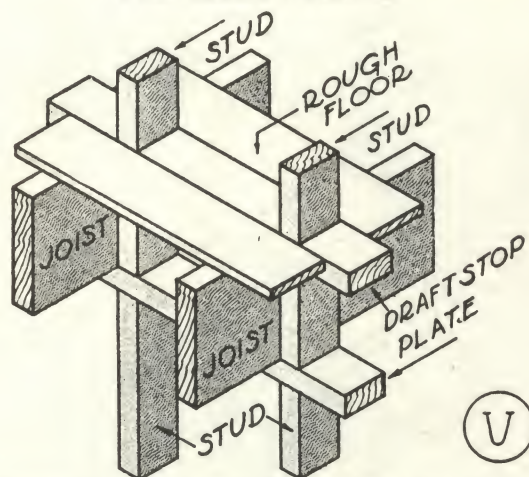
BRACING
BETWEEN STUDS



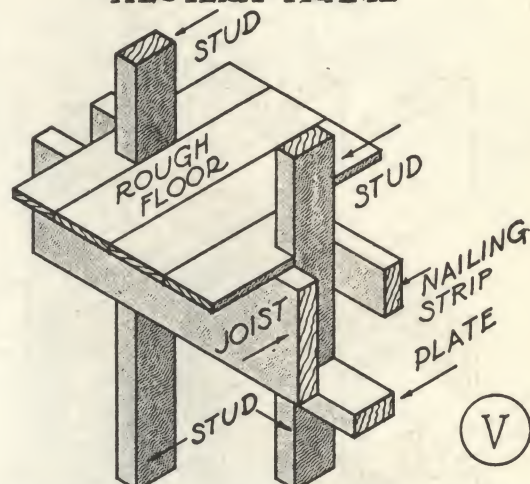
PARTITION AT RIGHT ANGLE TO JOISTS
WESTERN FRAME



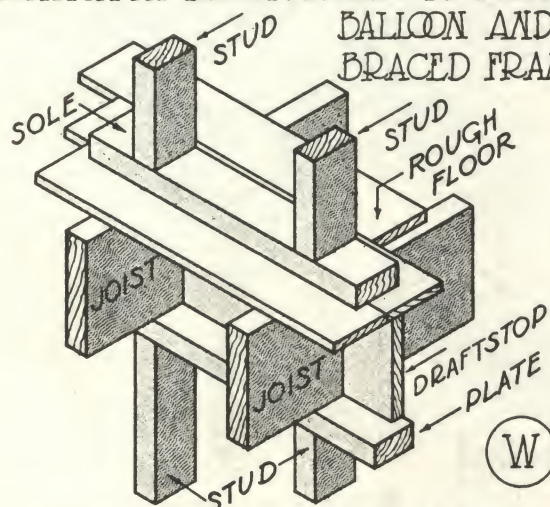
PARTITION PARALLEL WITH JOISTS
WESTERN FRAME



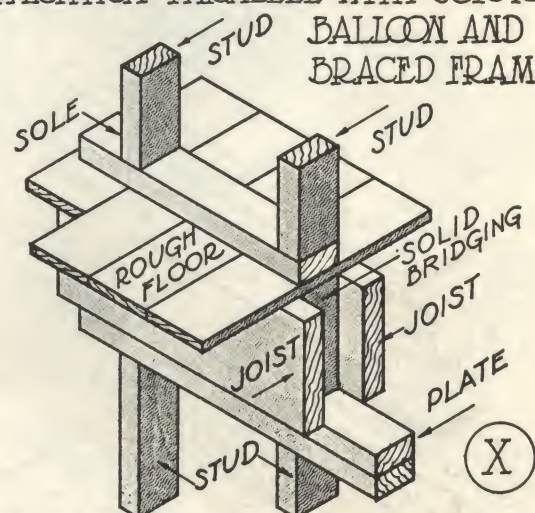
PARTITION AT RIGHT ANGLE TO JOISTS
BALLOON AND
BRACED FRAME



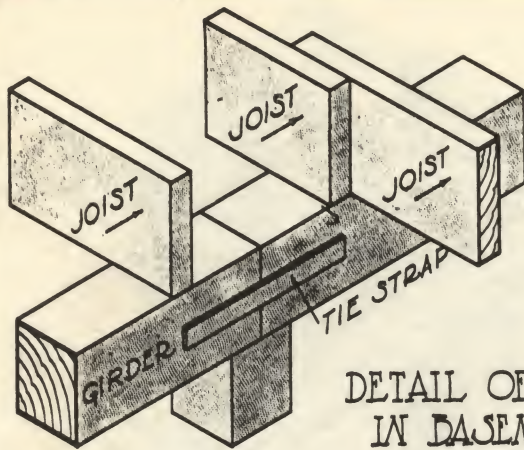
PARTITION PARALLEL WITH JOISTS
BALLOON AND
BRACED FRAME



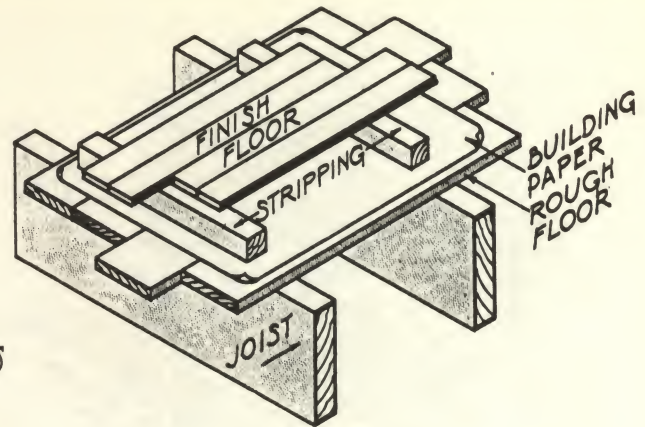
PARTITION AT RIGHT ANGLE TO JOISTS
BALLOON FRAME



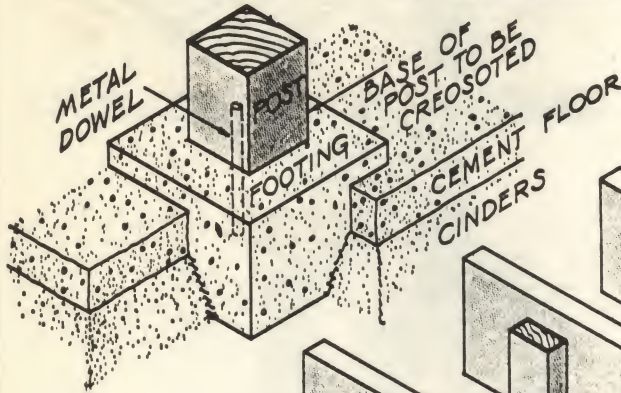
PARTITION PARALLEL WITH JOISTS
AND JOISTS SPREAD FOR PIPES ETC



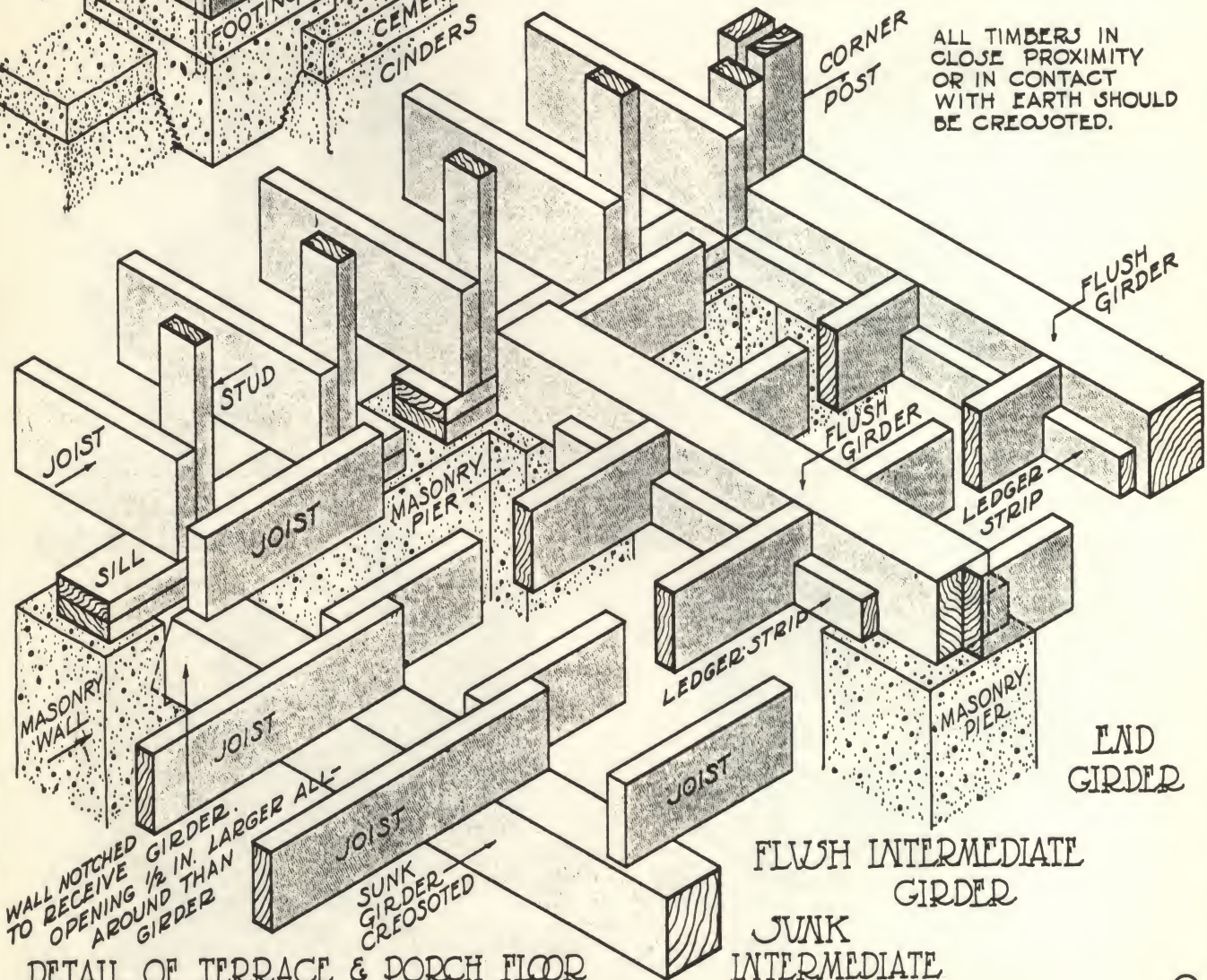
DETAIL OF POSTS
IN BASEMENT



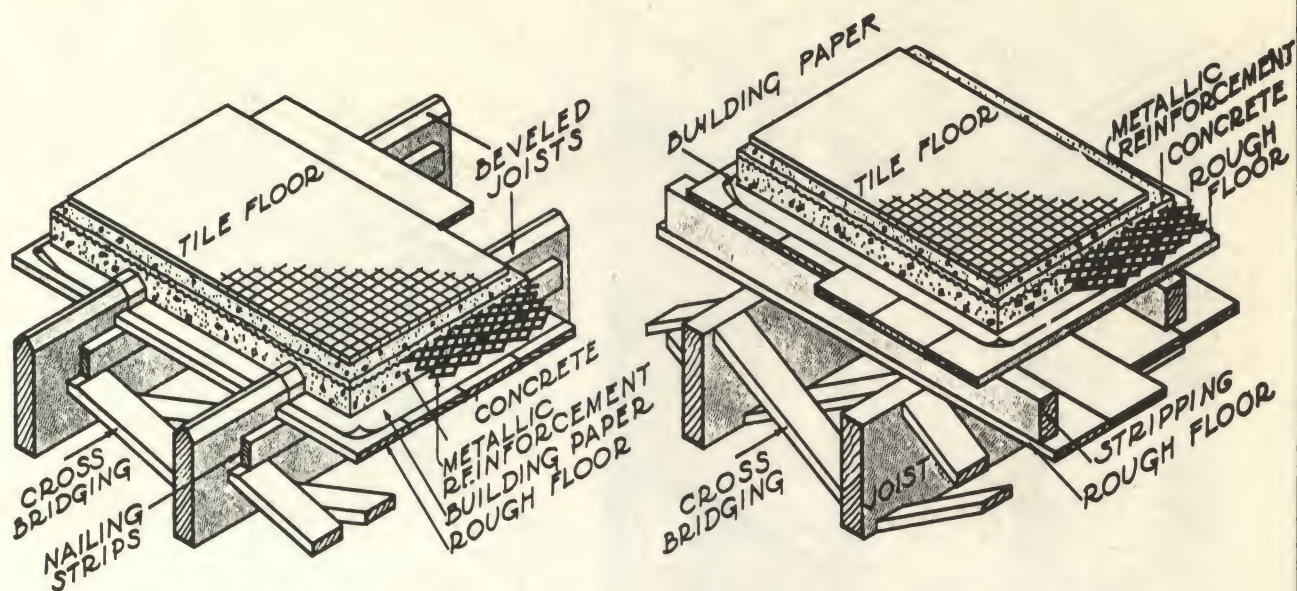
USE OF STRIPPING IN FLOORS
TO PROVIDE SPACE FOR CONDUITS



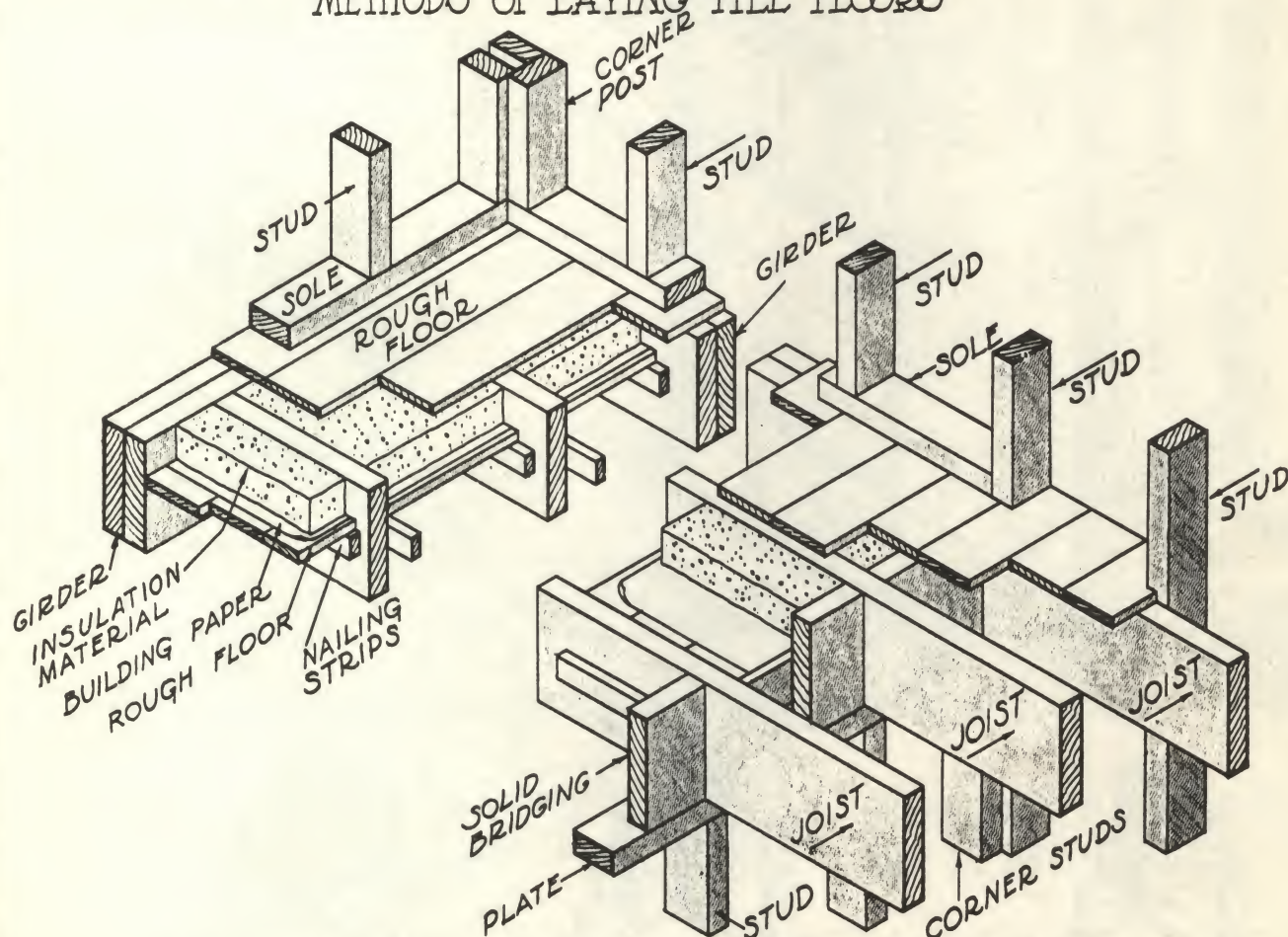
ALL TIMBERS IN
CLOSE PROXIMITY
OR IN CONTACT
WITH EARTH SHOULD
BE CREOSOTED.



DETAIL OF TERRACE & PORCH FLOOR

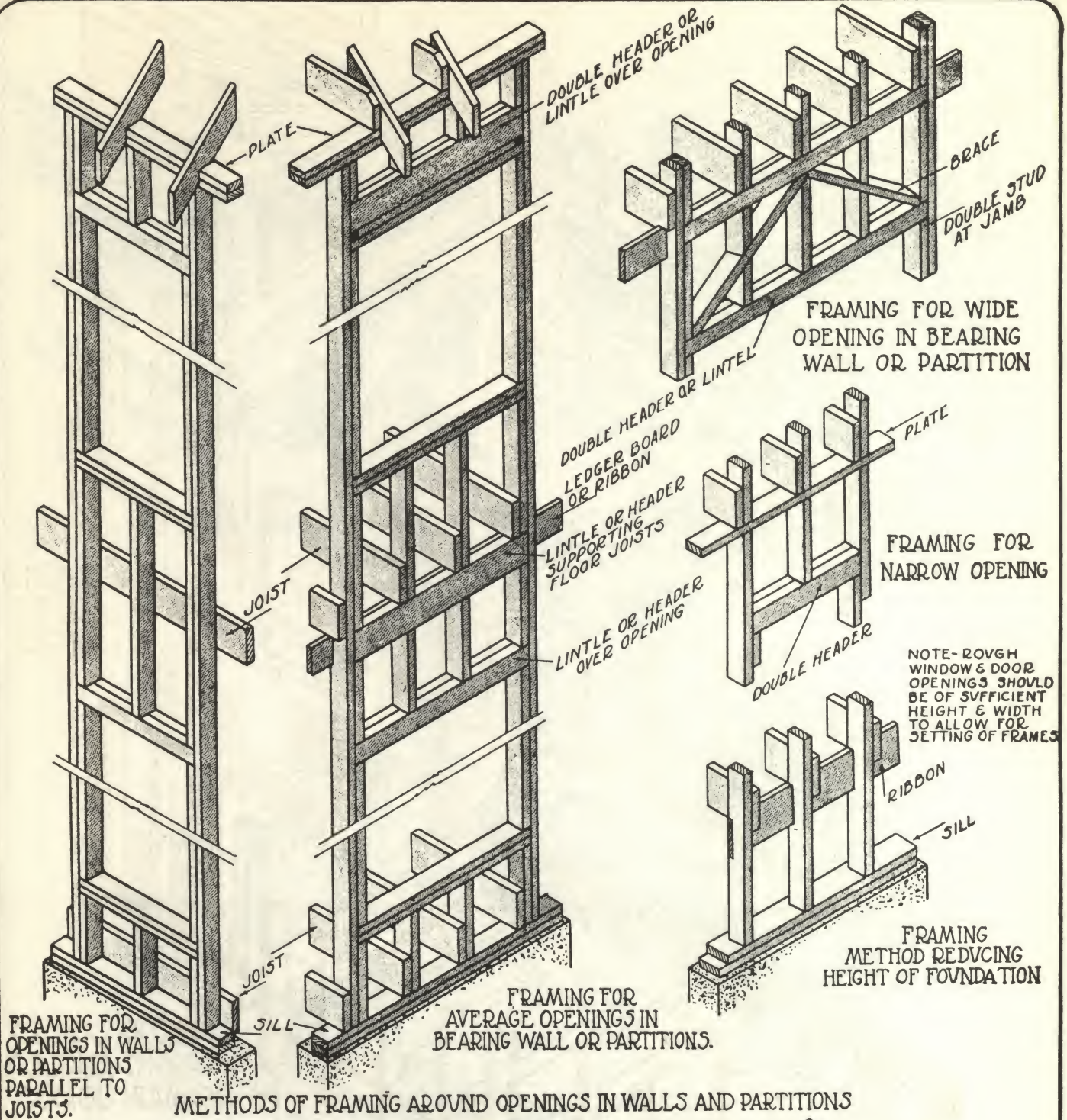


TILE FLOOR FLUSH WITH MAIN FLOOR TILE FLOOR STEPPED UP
METHODS OF LAYING TILE FLOORS

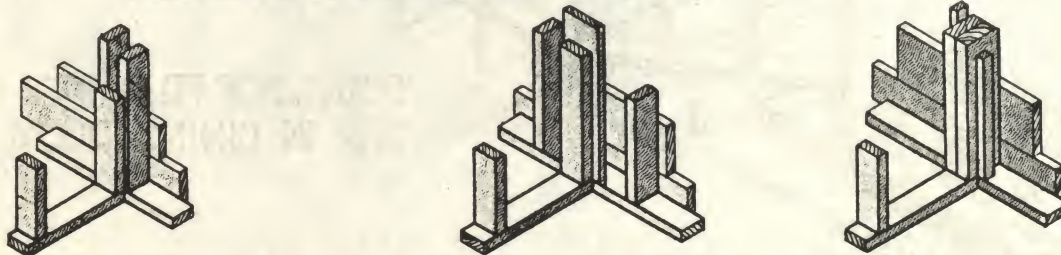


DETAIL OF SECOND FLOOR OVER THE REAR PORCH



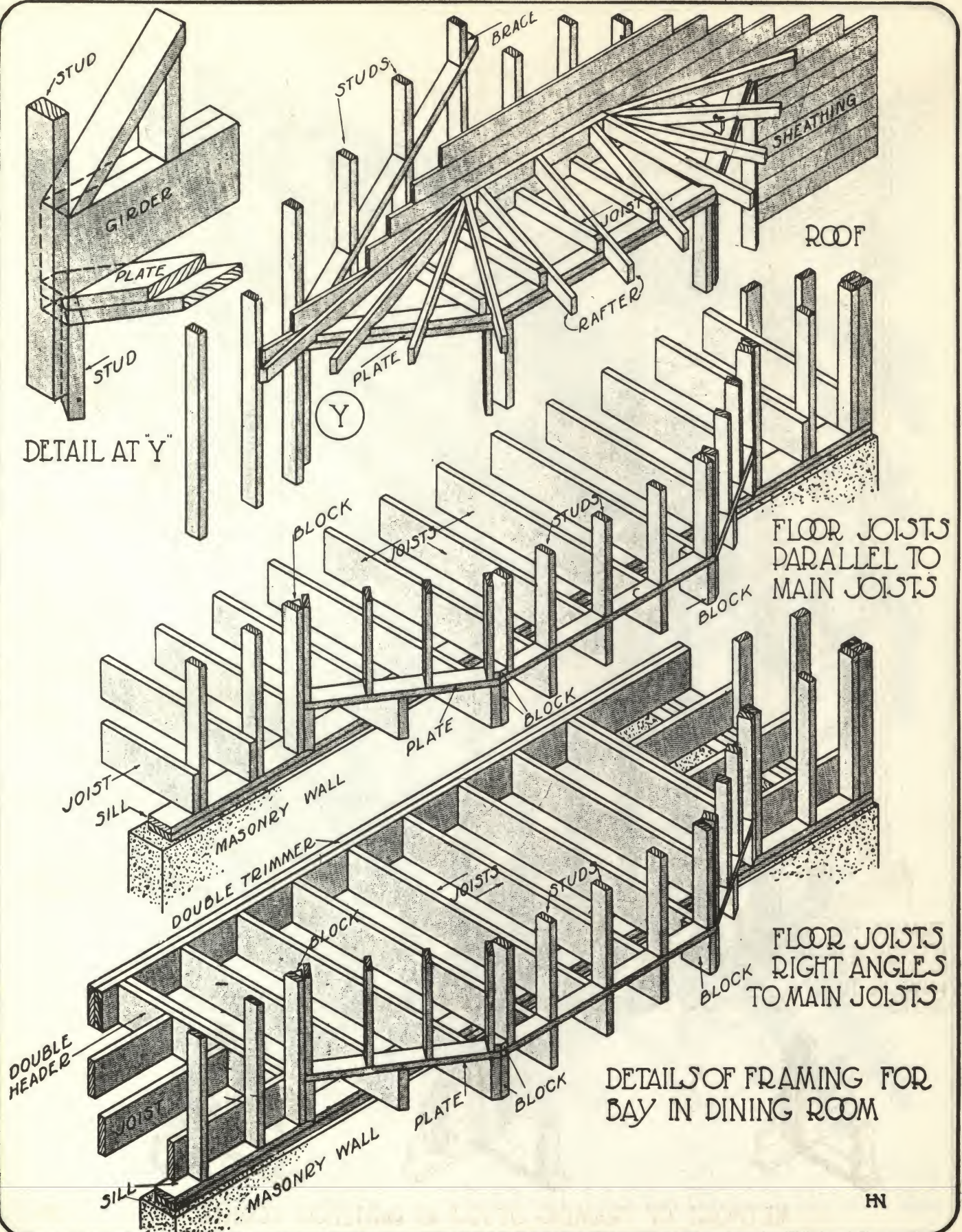


METHODS OF FRAMING AROUND OPENINGS IN WALLS AND PARTITIONS

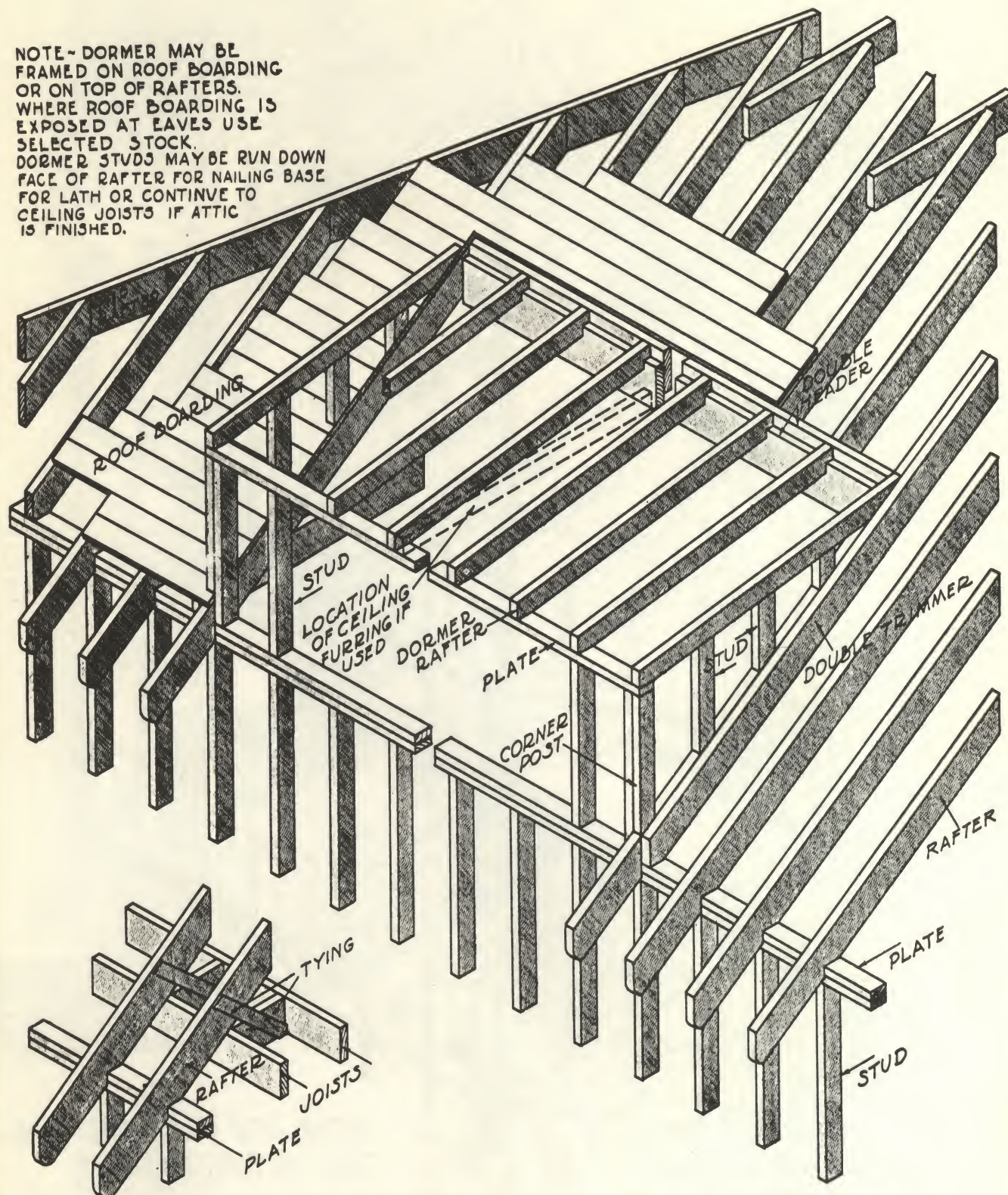


METHODS OF FRAMING STUDS AT PARTITION CORNERS

HN



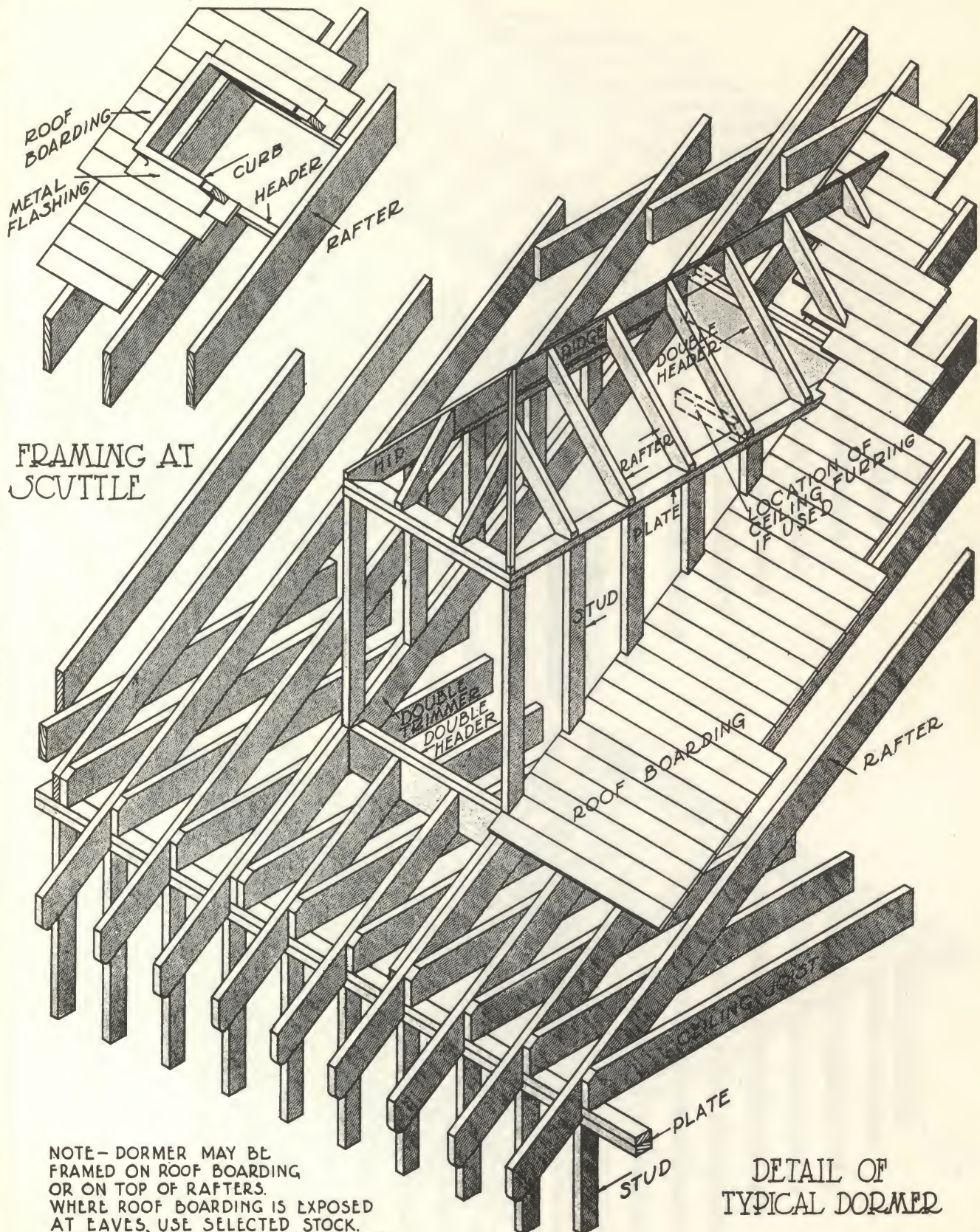
NOTE - DORMER MAY BE FRAMED ON ROOF BOARDING OR ON TOP OF RAFTERS. WHERE ROOF BOARDING IS EXPOSED AT EAVES USE SELECTED STOCK. DORMER STUDS MAY BE RUN DOWN FACE OF RAFTER FOR NAILING BASE FOR LATH OR CONTINUE TO CEILING JOISTS IF ATTIC IS FINISHED.



METHOD OF BRACING ROOF WHERE RAFTERS ARE AT RIGHT ANGLES TO JOISTS

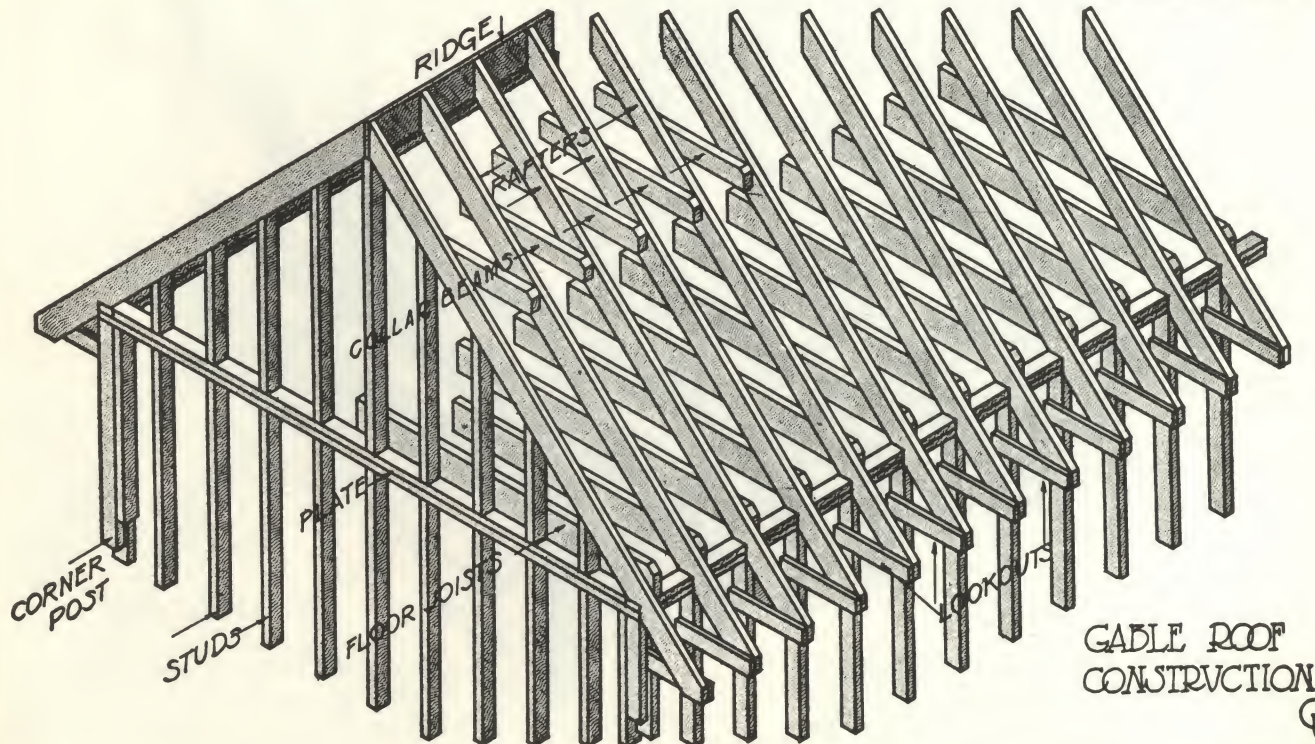
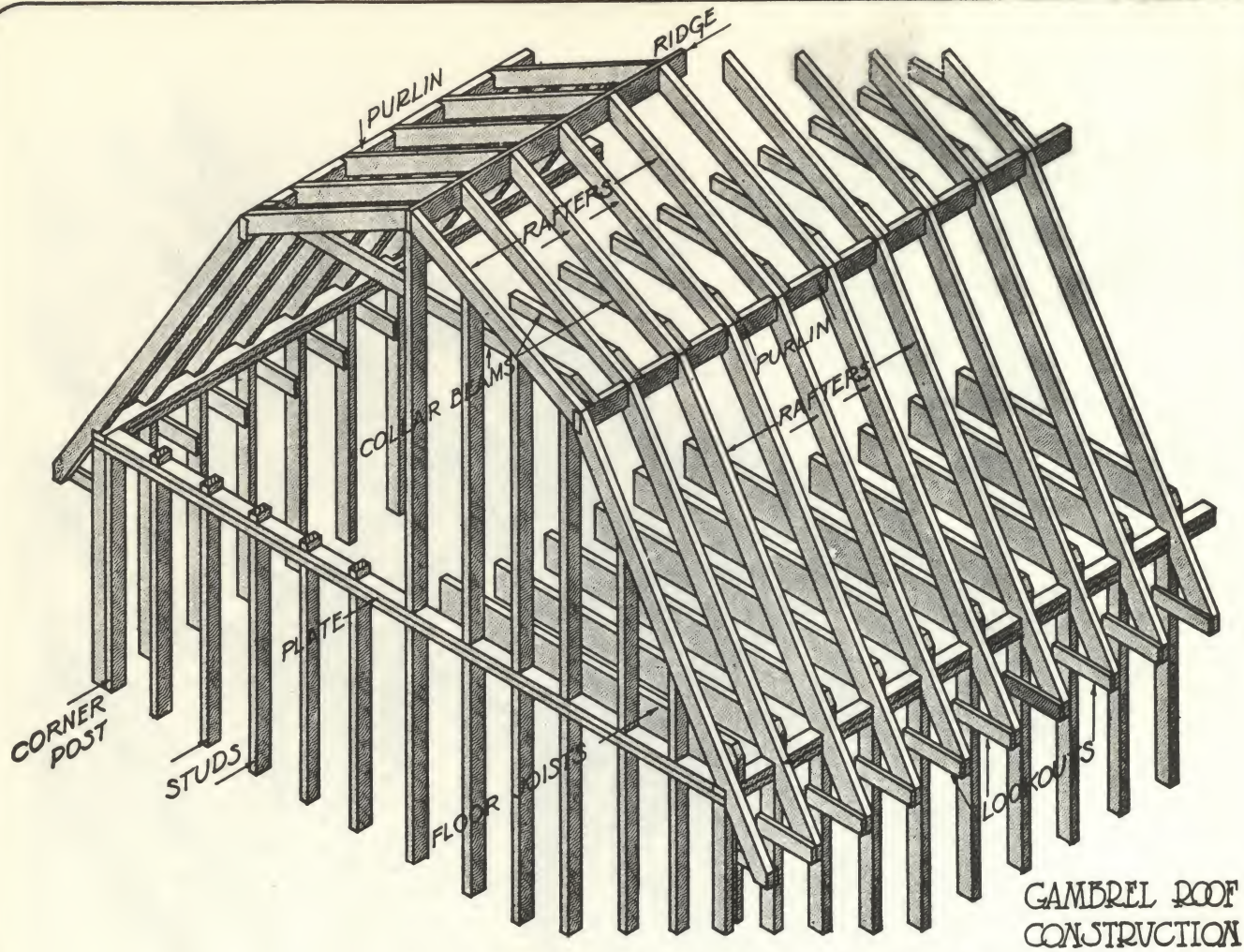
DETAIL OF DORMER OVER STAIR-HALL



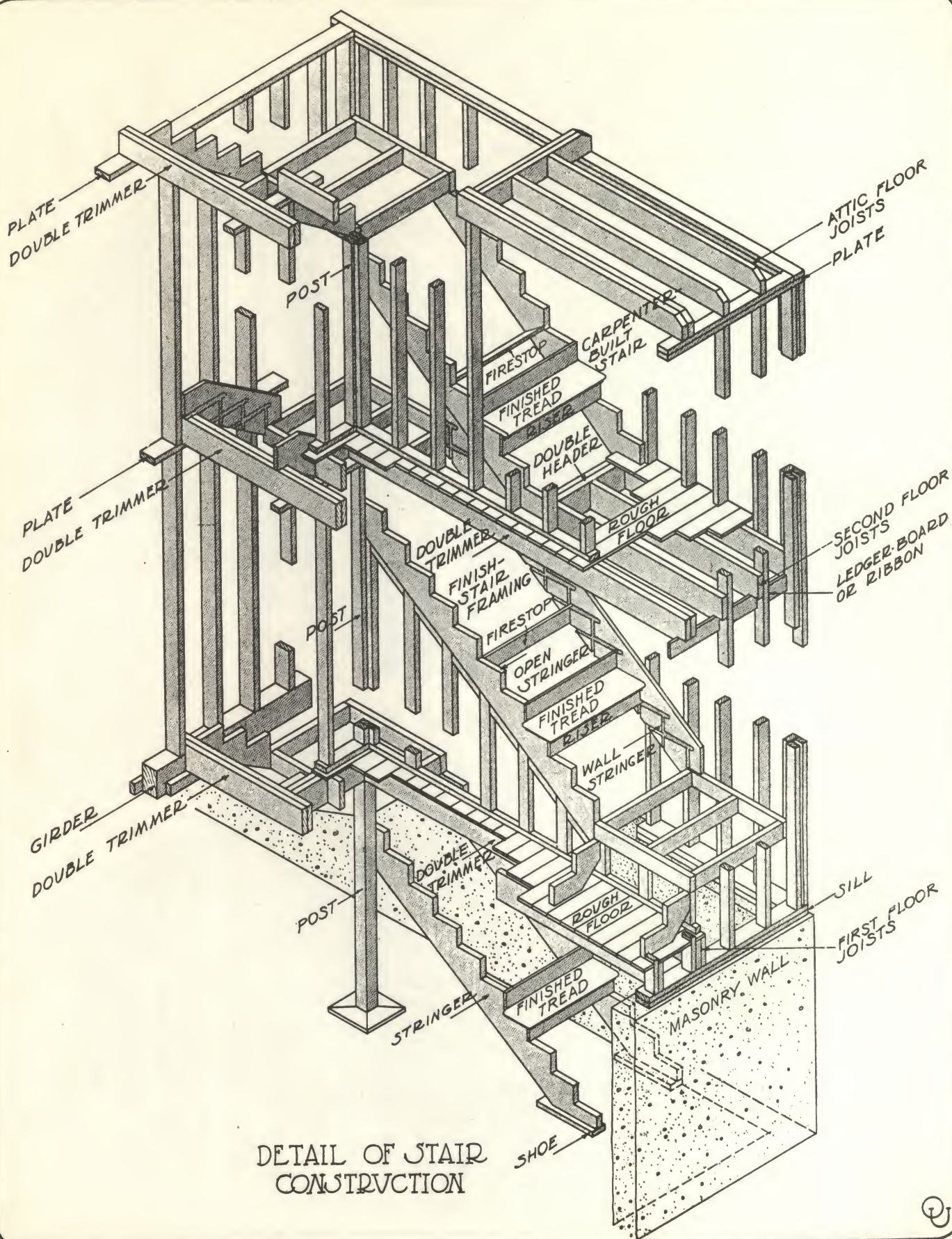


NOTE—DORMER MAY BE FRAMED ON ROOF BOARDING OR ON TOP OF RAFTERS. WHERE ROOF BOARDING IS EXPOSED AT EAVES, USE SELECTED STOCK. DORMER STUDS MAY RUN DOWN FACE OF RAFTER FOR NAILING BASE FOR LATH OR CONTINUE TO CEILING JOISTS IF ATTIC IS FINISHED.

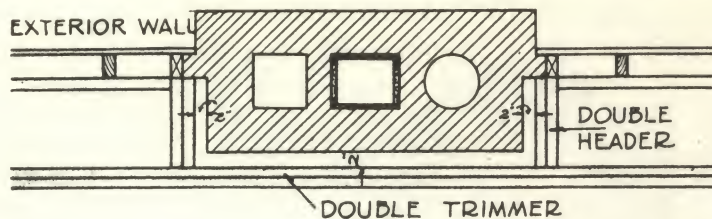
DETAIL OF
TYPICAL DORMER



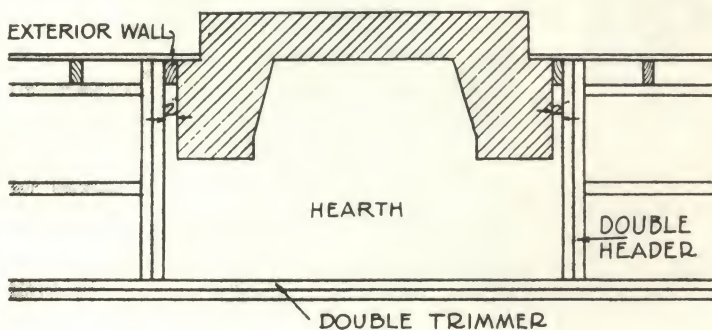
MEMORANDA



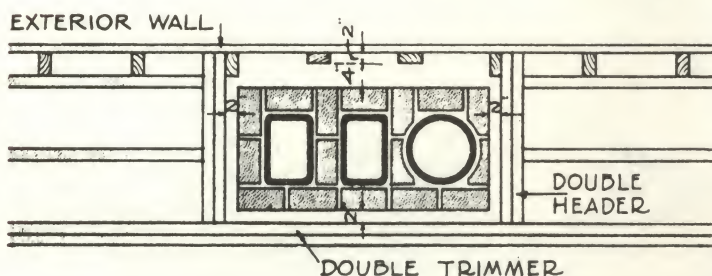
NOTE—SEE NATIONAL BOARD OF FIRE UNDERWRITERS STANDARD ORDINANCE FOR CHIMNEY CONSTRUCTION



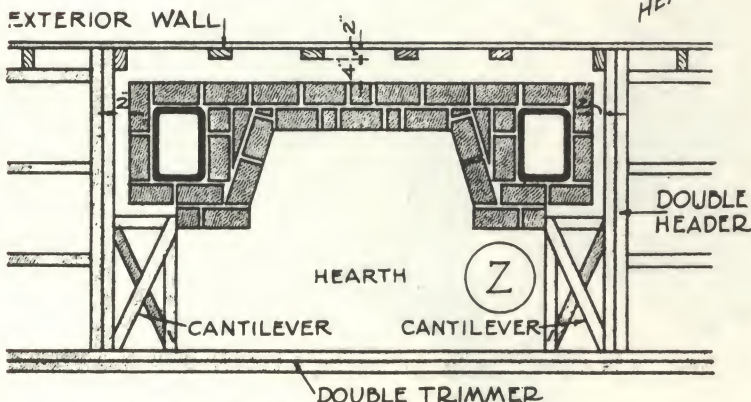
CHIMNEY ABOVE FIREPLACE



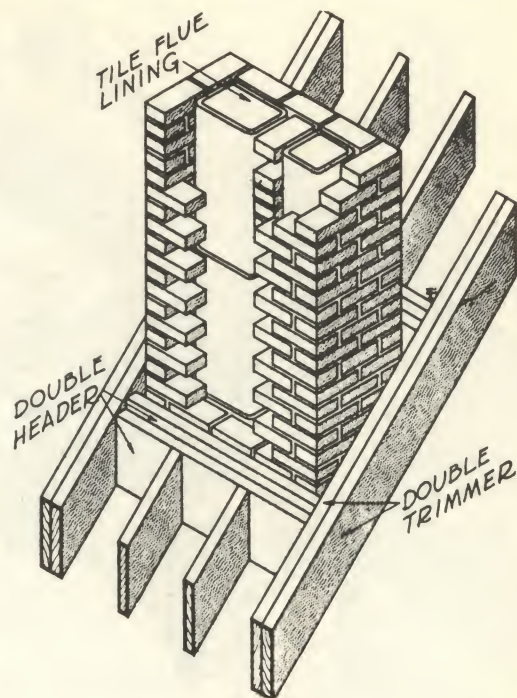
PLAN OF FIREPLACE



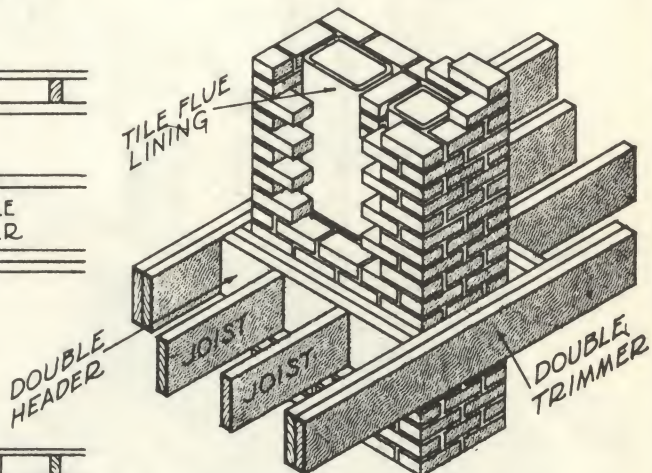
CHIMNEY ABOVE FIREPLACE



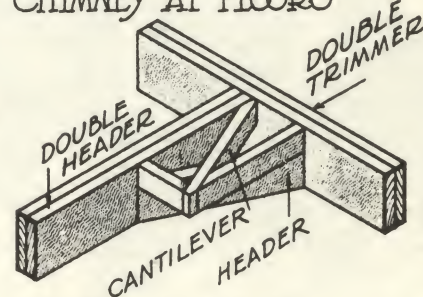
ALTERNATE PLAN OF FIREPLACE
WITH ADDITIONAL FLUES SHOWN



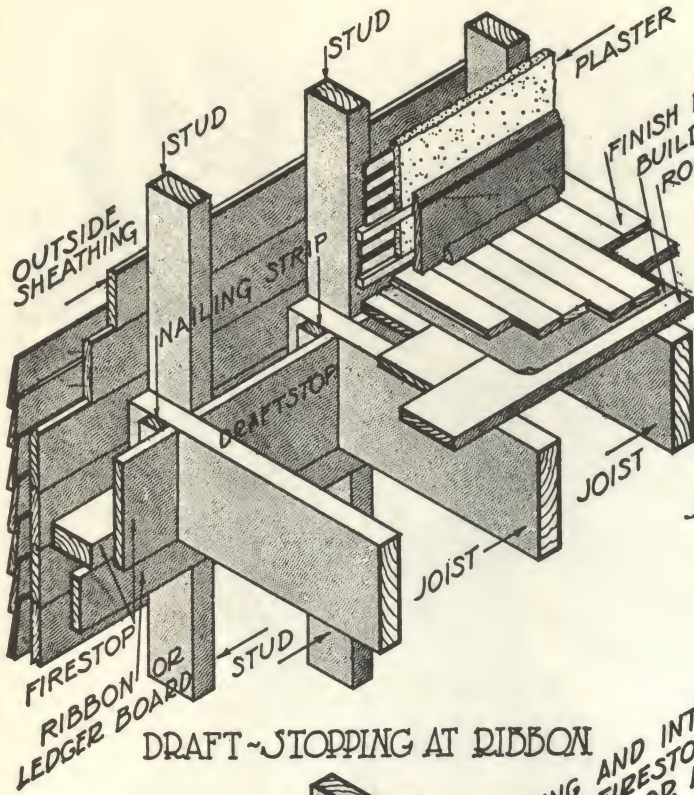
CHIMNEY AT ROOF



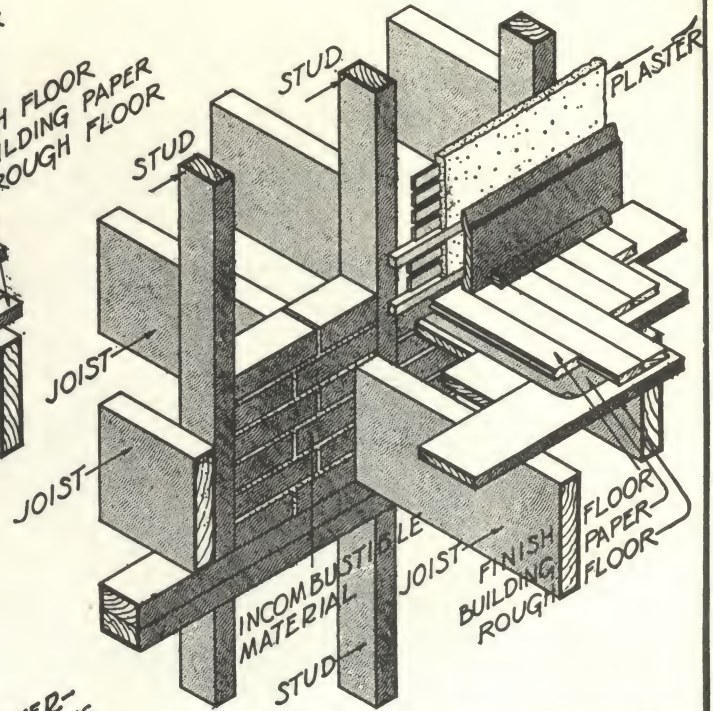
CHIMNEY AT FLOOR



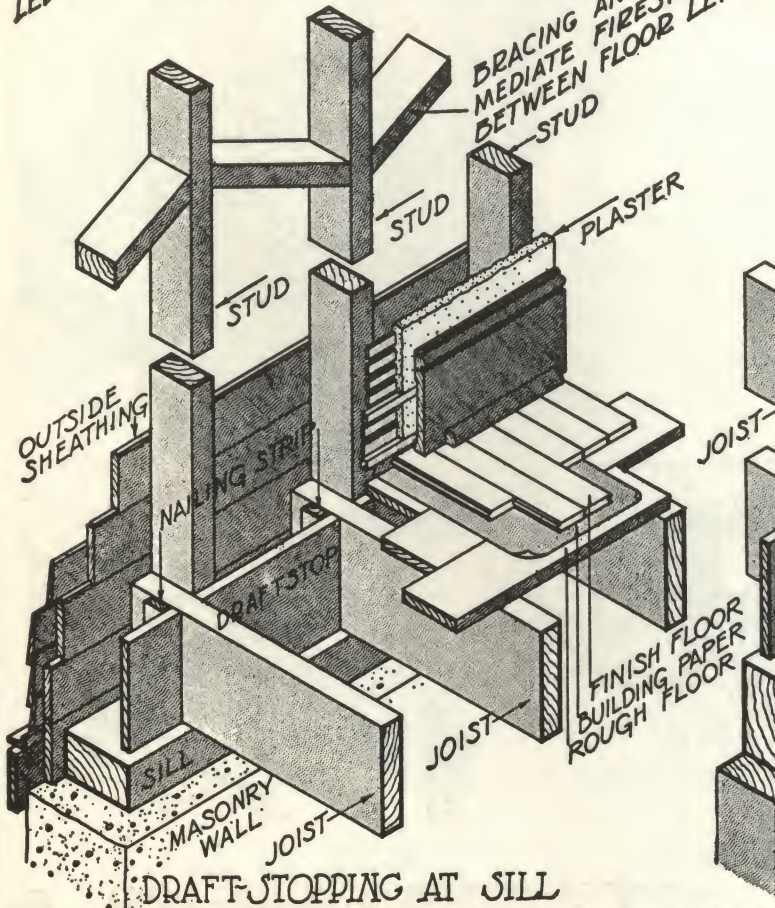
DETAIL AT Z



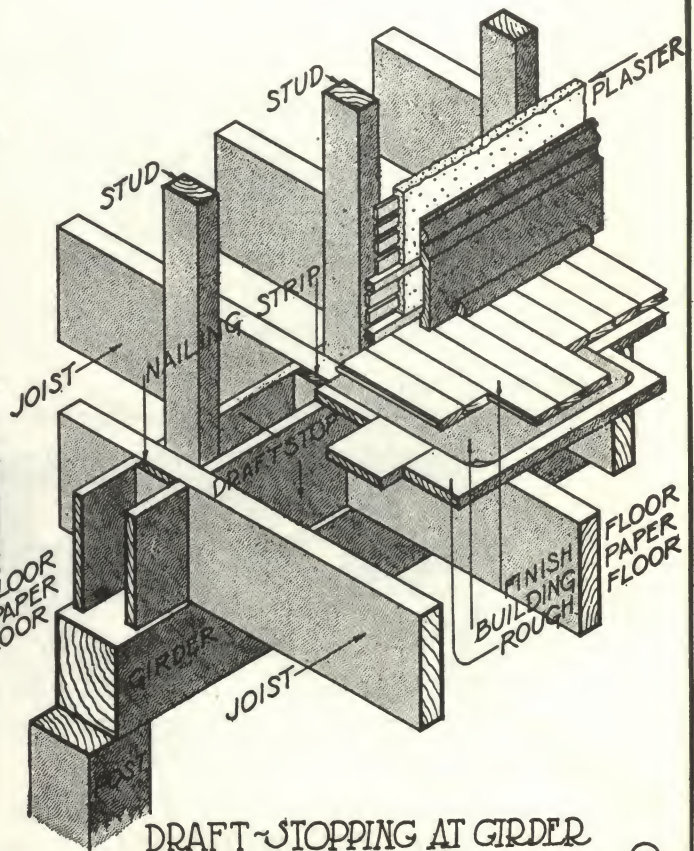
DRAFT-STOPPING AT RIBBON



DRAFT-STOPPING AT PARTITIONS



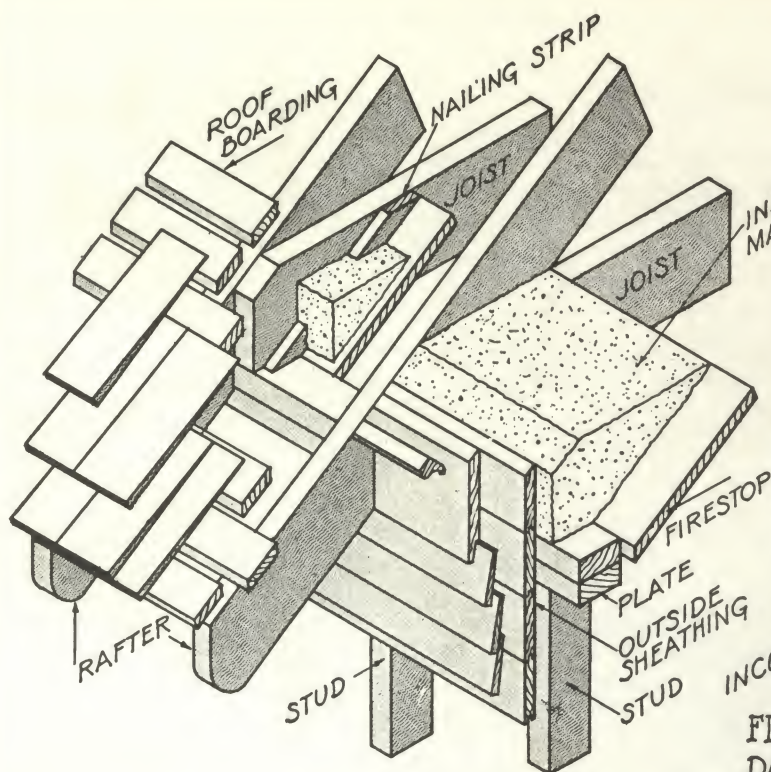
DRAFT-STOPPING AT SILL



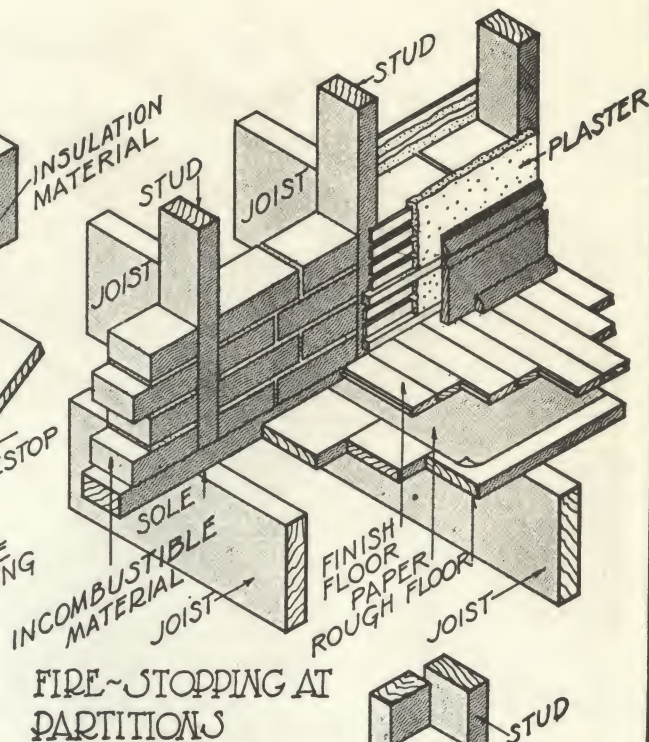
DRAFT-STOPPING AT GIRDER

NOTE - EFFICIENCY OF FIRESTOPPING MAY BE INCREASED BY PLACING INCOMBUSTIBLE MATERIAL BETWEEN WOOD FIRESTOP MEMBERS.

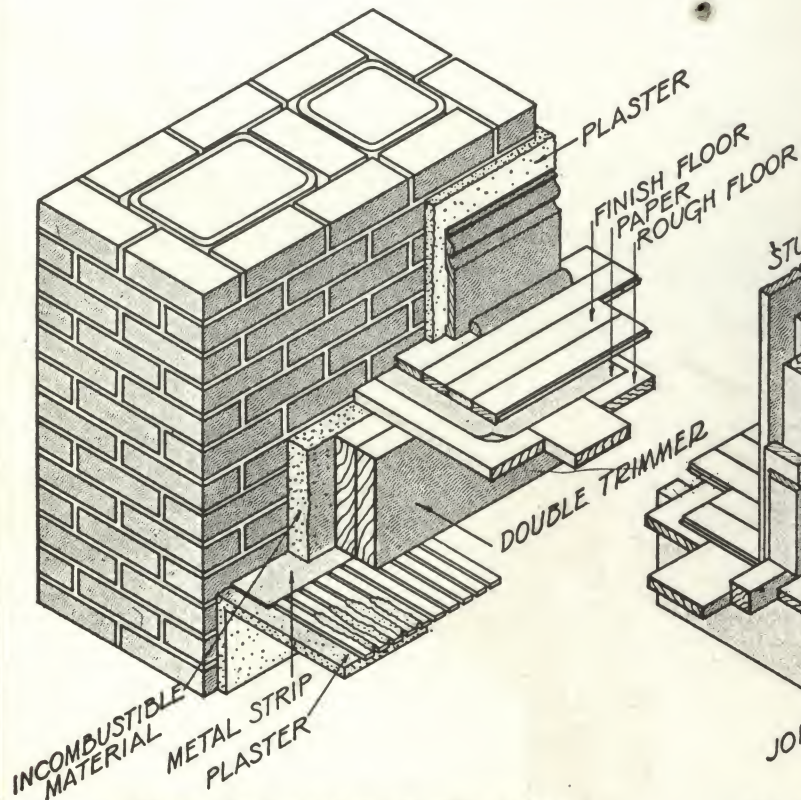
①



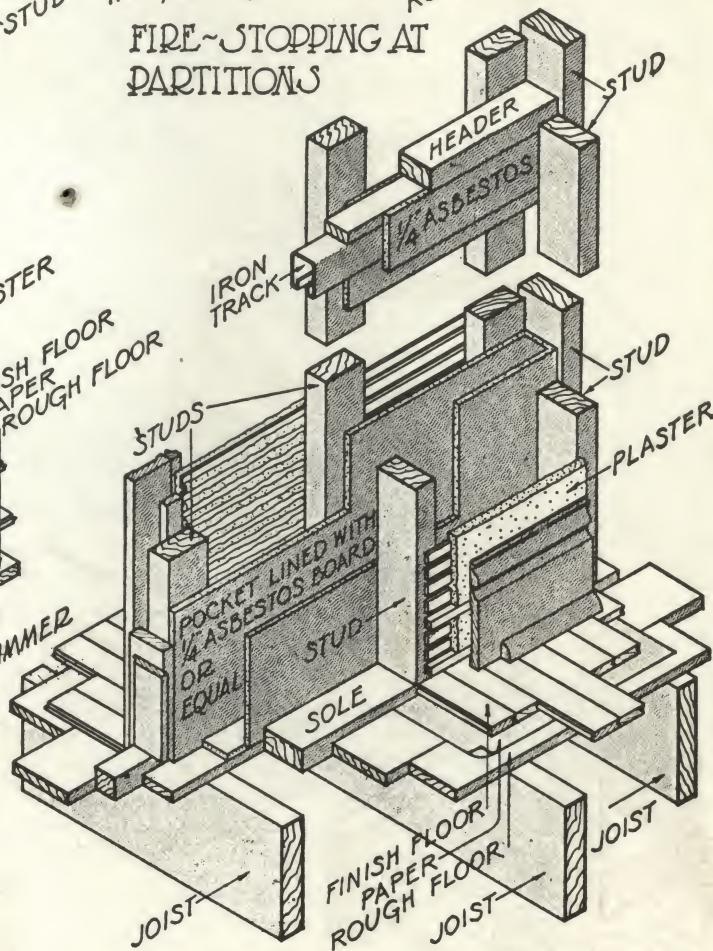
FIRE-STOPPING AT CORNICE



FIRE-STOPPING AT PARTITIONS



FIRE-STOPPING AT CHIMNEY



FIRE-STOPPING AT SLIDING DOOR

WHERE ADDITIONAL LUMBER INFORMATION MAY BE OBTAINED

THIS publication is a part of the service to distributors and consumers of lumber sponsored by the National Lumber Manufacturers Association. It is suggested that those desiring additional information regarding the respective species of wood write the following regional associations:

American Walnut Manufacturers Association..... American Walnut.	Chicago, Illinois
Appalachian Hardwood Manufacturers, Inc..... Appalachian Ash, Basswood, Beech, Birch, Butternut, Chestnut, Cherry, Elm, Hickory, Maple, Yellow Poplar, Red Oak, White Oak, Walnut.	Cincinnati, Ohio
Hardwood Dimension Manufacturers Association..... American Walnut, Ash, Basswood, Beech, Birch, Butternut, Chestnut, Cherry, Elm, Hickory, Maple, Yellow Poplar, Red Oak, White Oak, Hemlock, Tamarack, White Pine, Cypress (yellow), Cottonwood, Gum (black), Gum (red and sap), Hackberry, Hickory, Magnolia, Pecan, Persimmon, Sycamore, Tupelo, Willow.	Louisville, Kentucky
Mahogany Association, Inc..... Mahogany.	Chicago, Illinois
Maple Flooring Manufacturers Association..... Maple, Beech and Birch Flooring.	Chicago, Illinois
Northeastern Lumber Manufacturers Association..... Northern White Pine, Norway Pine, Eastern Spruce, Balsam Fir, Northern Hardwoods.	New York, New York
Northern Hemlock and Hardwood Manufacturers Association..... Hemlock, Birch, Maple, Basswood, Elm, Ash, Beech, Tamarack, White Pine.	Oshkosh, Wisconsin
Northern Pine Manufacturers Association..... Northern White Pine, Norway Pine, Eastern Spruce, Tamarack.	Chicago, Illinois
Southern Cypress Manufacturers Association..... Tidewater Red Cypress.	Jacksonville, Florida
Southern Hardwood Producers, Inc..... Ash, Basswood, Beech, Cypress (yellow), Cottonwood, Elm, Gum (black), Gum (red and sap), Hackberry, Hickory, Maple (soft), Magnolia, Oak (white), Oak (red), Poplar, Pecan, Persimmon, Sycamore, Tupelo, Willow.	Memphis, Tennessee
Southern Pine Association..... Longleaf and Shortleaf Southern Pine.	New Orleans, Louisiana
West Coast Lumberman's Association..... Douglas Fir, West Coast Hemlock, Sitka Spruce, Western Red Cedar, Port Orford Cedar.	Portland, Oregon
Western Pine Association..... Ponderosa Pine, Idaho White Pine, Sugar Pine, Larch, Douglas Fir, White Fir, Englemann Spruce, Red Cedar, Incense Cedar.	Portland, Oregon
The Veneer Association.....	Chicago, Illinois

NATIONAL LUMBER MANUFACTURERS ASSOCIATION

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CHICAGO MINNEAPOLIS NEW ORLEANS NEW YORK SAN FRANCISCO

COOPERATING ORGANIZATIONS

National Hardwood Lumber Association.....	Chicago, Illinois
National-American Wholesale Lumber Association.....	New York, New York
National Retail Lumber Dealers Association.....	Washington, D. C.
National Association of Commission Lumber Salesmen.....	St. Louis, Mo.
National Wooden Box Association.....	Washington, D. C.
National Door Manufacturers Association.....	Chicago, Illinois
National Association of Hardwood Wholesalers.....	Chicago, Illinois
National Wholesale Lumber Yard Distributors Association.....	Baltimore, Maryland
Southern Pine Inspection Bureau of the Southern Pine Association.....	New Orleans, La.

WHERE ADDITIONAL LUMBER INFORMATION MAY BE OBTAINED

THIS publication is a part of the service to distributors and consumers of lumber sponsored by the National Lumber Manufacturers Association. It is suggested that those desiring additional information regarding the respective species of wood write the following regional associations:

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From the collection of:

Mike Jackson, FAIA

National Wooden Box Association.....	
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